

3.4.4 Transport for Spectators Demand

(1) Venues and Zones

Figure 3-92 shows the venues and zones of the Olympic Games. Spectators going to and coming from each zone were considered and discussed as follows.

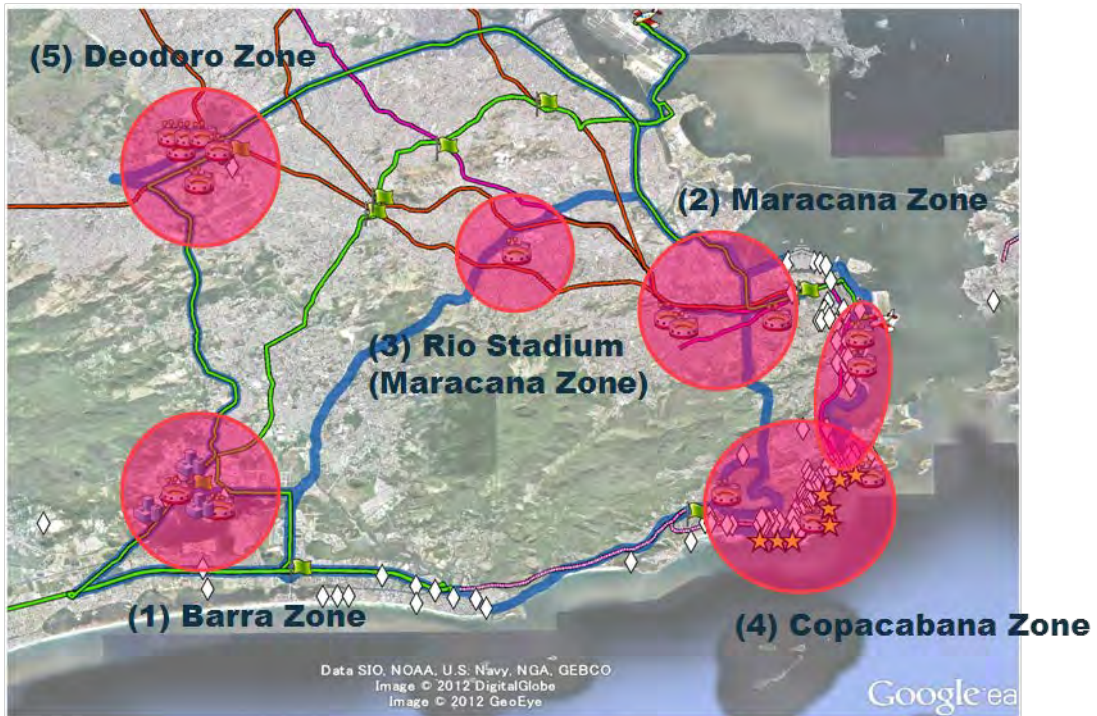


Figure 3-92 Venues and Zones

(2) Transport System around the Venues

1) Barra Zone

The demand characteristics of Barra Zone are as follows:

- Peak demand: about 45,000 per hour;
- Competition venues are concentrated (Olympic Park);
- Accommodation for athletes is located (Olympic Village);
 - Traveler information and event information need to be provided for hotel guests
- BRT is the only mode of access; and
- BRT terminals are located close to the venues.

Table 3-21 Venues in Barra Zone

Venue
RIO OLYMPIC PARK
RIOCENTRO

The main routes for the spectators in the Barra Zone are as follows:

- Metro 4 and BRT (TransOeste);
- SuperVIA and BRT(TransCarioca); and
- Metro 2 and BRT (TransCarioca).



Figure 3-93 Main Flow of Spectators in Barra Zone

[Transportation System by Venue]

Venue	RIO OLYMPIC PARK
Gross Seat	OTC – Hall 1 (Basketball) – 6,000 OTC – Hall 2 (Judo) – 10,000 OTC – Hall 2 (Taekwondo) – 10,000 OTC – Hall 3 (Wrestling) – 10,000 OTC – Hall 4 (Handball) – 12,000 Olympic Hockey Center – 15,000 Olympic Tennis Center – 19,750 Rio Olympic Velodrome (Cycling - Track) – 5,000 Maria Lenk Aquatic Center (Diving) – 6,500 Maria Lenk Aquatic Center (Water Polo) – 6,500 Olympic Aquatics Stadium (Swimming, Synchronized Swimming) – 18,000 Rio Olympic Arena (Gymnastics Artistic, Rhythmic) – 12,000 Rio Olympic Arena (Trampoline) – 12,000



Figure 3-94 Transport System of Rio Olympic Park

Venue	RIOCENTER
Gross Seat	Pavilion 2 (Boxing) -9,000 Pavilion 3 (Table Tennis) – 7,000 Pavilion 4 (Badminton) – 6,500 Pavilion 6 (Weightlifting) – 6,500

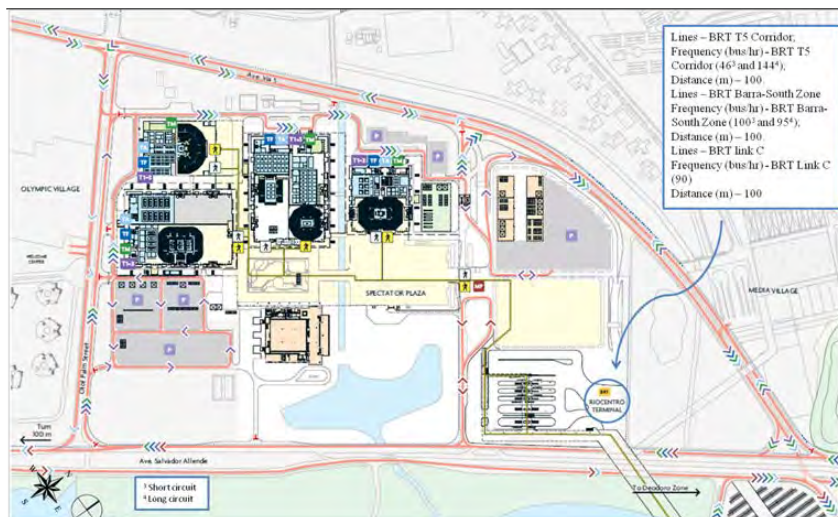


Figure 3-95 Transport System of RioCenter

2) Maracana Zone

The demand characteristics of Maracana Zone are as follows:

- Peak demand: about 50,000 – 60,000 per hour;
- Stadium for ceremonies, football games (capacity: 90,000) and other big events;
 - Visitors will be concentrated in one place all at once
- Metro and SuperVIA stations are adjacent; and
- Local bus stops are also located.

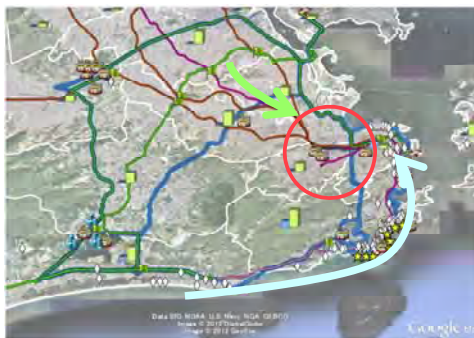
Table 3-22 Venues in Maracana Zone

Venue
MARACANÃ
Sambódromo
São Januário Stadium

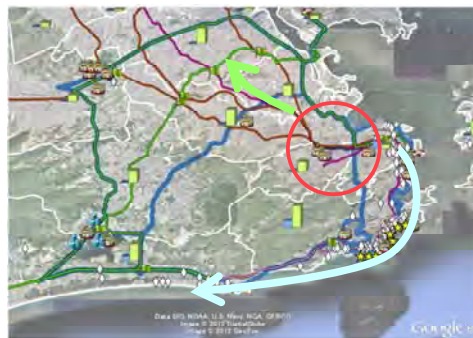
The main routes for the spectators in the Maracana Zone are as follows:

- Metro 1, Metro 4 and BRT (TransOeste);
- SuperVIA; and
- Metro 2.

Arrival at Barra



Departure from Barra



Legend

Olympic Related Place

- Competition Venue
- OV MV IBC/MPC
- Games Family Hotels
- Intermodal Transfer Station
- Airport
- Port
- Hotels

Transport Modes

- BRT
- Railway
- Metro NewLine
- Metro
- Olympic Lanes

Directional Indicators

- Hotel
- House

Figure 3-96 Main Flow of Spectators in Maracana Zone

[Transportation System by Venue]

Venue	MARACANÃ STADIUM and MARACANÃZINHO ARENA
Gross Seat	Maracanã Stadium (Football Finals) – 90,000 Maracanãzinho Arena (Volleyball) – 12,000 Maracanã Stadium (Opening and Closing Ceremonies) – 90,000

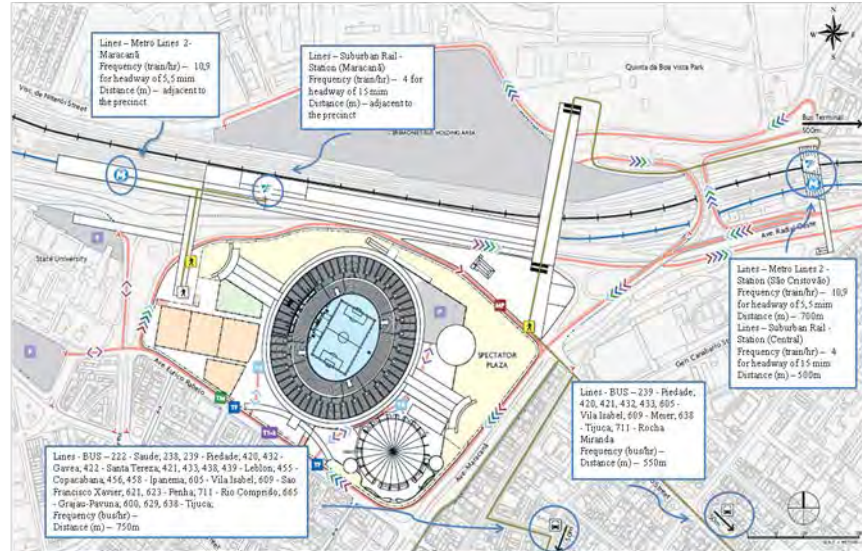


Figure 3-97 Transport System of Maracana Stadium

Venue	SAMBODROMO
Gross Seat	Archery – 6,000 Marathon – 30,000

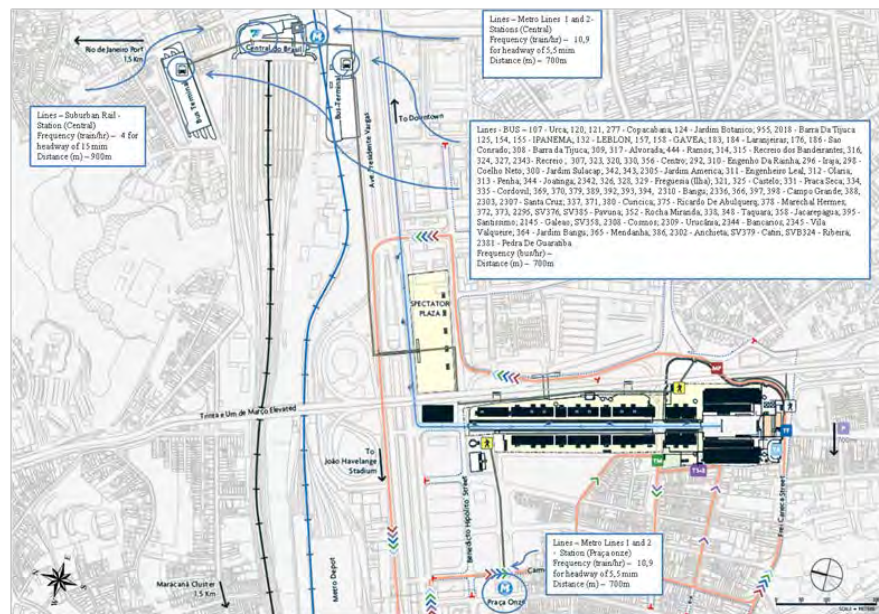


Figure 3-98 Transport System of Sambodromo

3) Rio Stadium

The demand characteristics of Rio Stadium are as follows:

- Peak demand: about 30,000 per hour;
- Large stadium for track and field (capacity: 60,000);
- SuperVIA station is adjacent but Metro station is about 3 km away; and
- Local bus stops are also located.

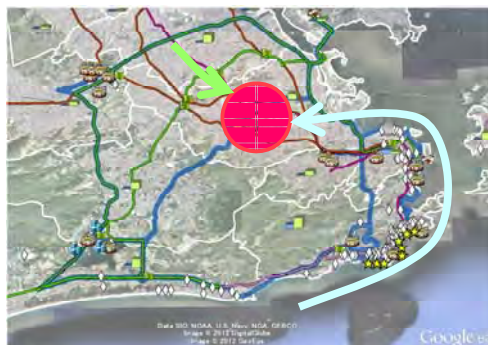
Table 3-23 Venues in Rio Stadium

Venue
João Havelange Stadium

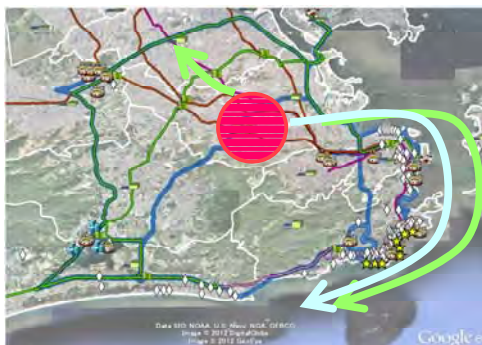
The main routes for the spectators in the Rio Stadium are as follows:

- SuperVIA, Metro 1 and Metro 4; and
- Metro 2.

Arrival at Rio Stadium



Departure from Rio Stadium



Legend

Olympic Related Place

- Competition Venue
- OV MV IBC/MPC
- Games Family Hotels
- Intermodal Transfer Station
- Airport
- Port
- Hotels

- BRT
- Railway
- Metro NewLine
- Metro
- Olympic Lanes

- Hotel
- House

Figure 3-99 Main Flow of Spectators in Rio Stadium

[Transportation System by Venue]

Venue	JOÃO HAVELANGE STADIUM
Gross Seat	Athletics (Track and Field) – 60,000

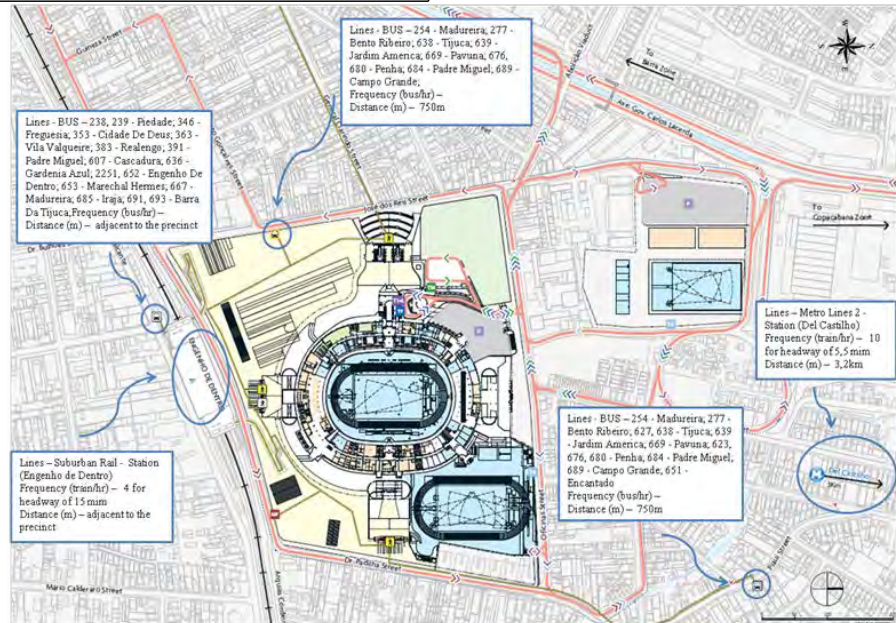


Figure 3-100 Transport System of Rio Stadium

4) Copacabana Zone

The demand characteristics of Copacabana Zone are as follows:

- Peak demand: about 15,000 per hour (relatively small);
- Several competition venues are located along the coast line;
 - Short-distance transportation such as local buses and integration across venues in this zone is necessary
- Hotels area;
 - Traveler information and event information need to be provided for hotel guests; and
- Metro stations are adjacent to each venue.

Table 3-24 Venues in Copacabana Zone

Venue
Copacabana Stadium
Fort Copacabana
Lagoa Rodrigo de Freitas
Marina da Glória
Flamengo Park Cluster

The main routes for the spectators in the Copacabana Zone are as follows:

- SuperVIA and Metro 1;
- Metro 1, Metro 2, and Metro 4; and
- Local buses.

Arrival at Copacabana



Departure from Copacabana



Legend

Olympic Related Place

- Competition Venue
- OV MV IBC/MPC
- Games Family Hotels
- Intermodal Transfer Station
- Airport
- Port
- Hotels
- BRT
- Railway
- Metro NewLine
- Metro
- Olympic Lanes

Hotel ←

House →

Figure 3-101 Main Flow of Spectators in Copacabana Zone

[Transportation System by Venue]

Venue	COPACABANA STADIUM
Gross Seat	Volleyball (Beach) – 12,000

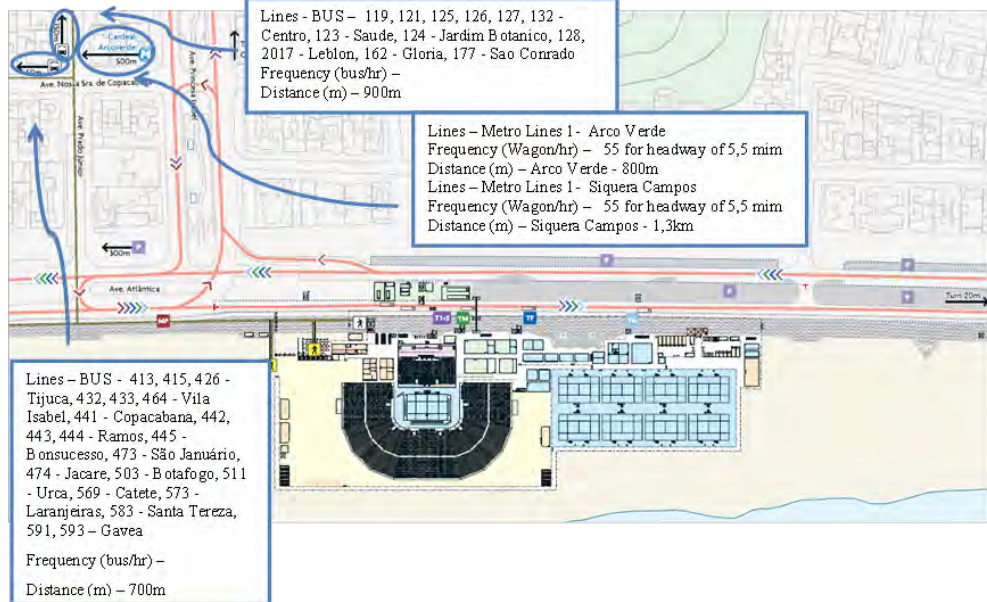


Figure 3-102 Transport System of Copacabana Stadium

Venue	FORT COPACABANA
Gross Seat	Marathon Swimming – 5,000, Triathlon – 5,000

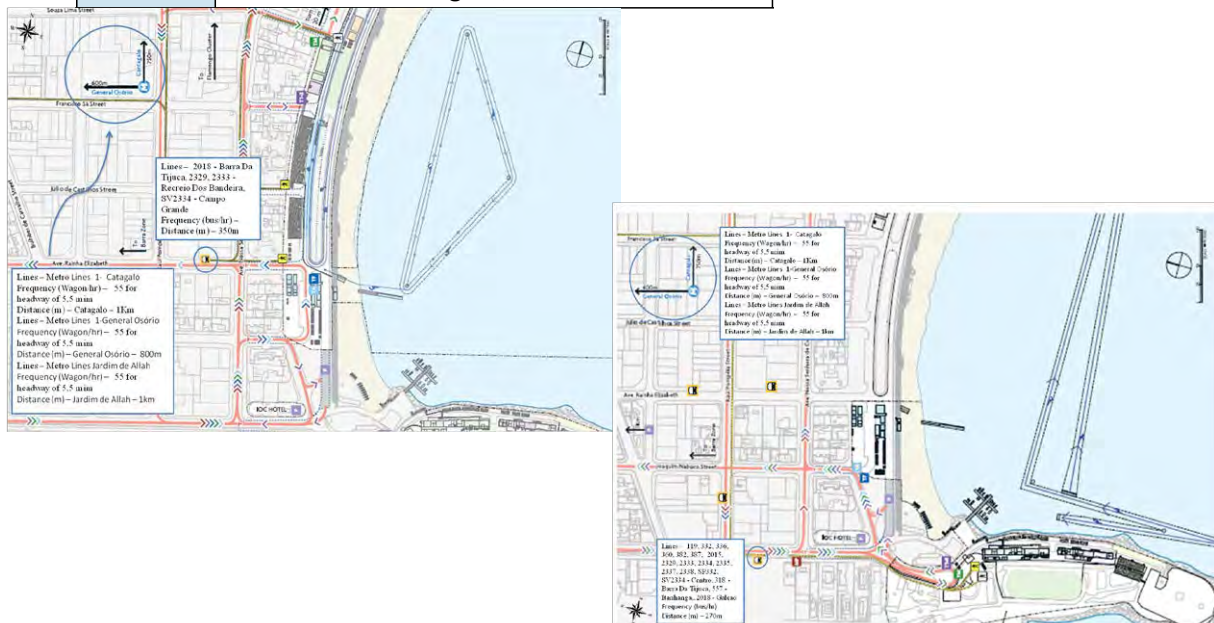


Figure 3-103 Transport System of Fort Copacabana

Venue	LAGOA RODRIGO DE FREITAS
Gross Seat	Rowing and Canoe/Kayak (Flatwater) – 14,000

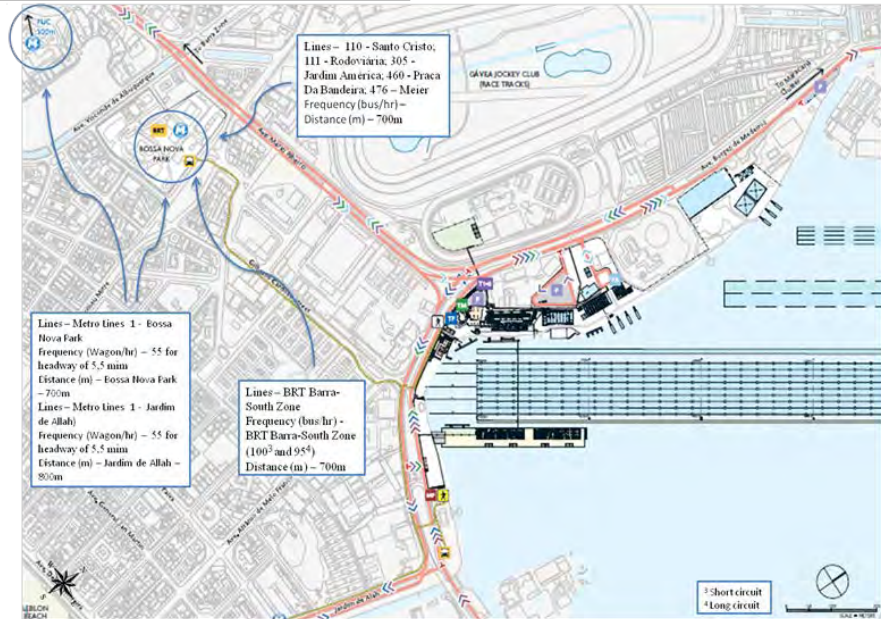


Figure 3-104 Transport System of Lagoa Rodrigo de Freitas

Venue	MARINA DA GLORIA
Gross Seat	Sailing – 10,000



Figure 3-105 Transport System of Marina da Glória

Venue	FLAMENGO PARK CLUSTER
Gross Seat	Athletics (Race Walk) – 5,000 Cycling (Road) – 5,000

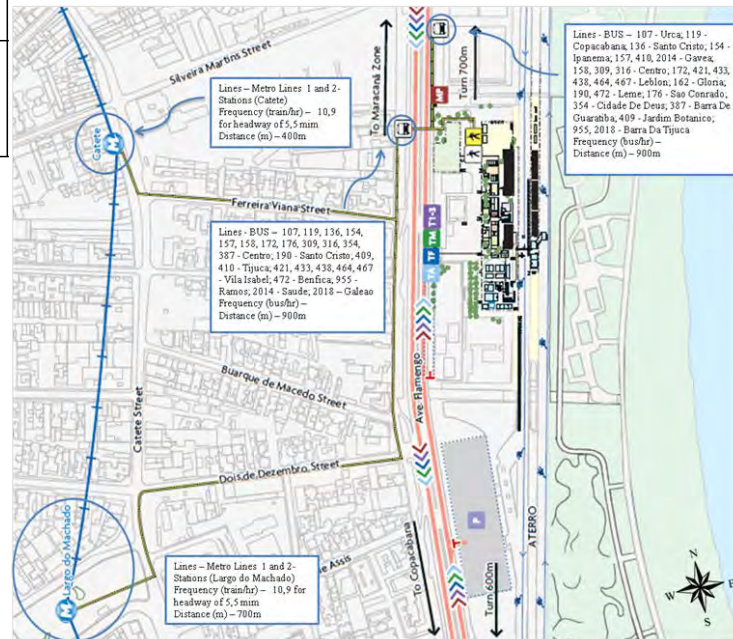


Figure 3-106 Transport System of Flamengo Park Cluster

5) Deodoro Zone

The demand characteristics of Deodoro Zone are as follows:

- Peak demand: about 20,000 per hour (relatively small);
- This zone is located in the suburbs;
 - High-speed mass transit system needs to be provided
- BRT station is adjacent; and
- SuperVIA stations are more than 1 km away from the venues.

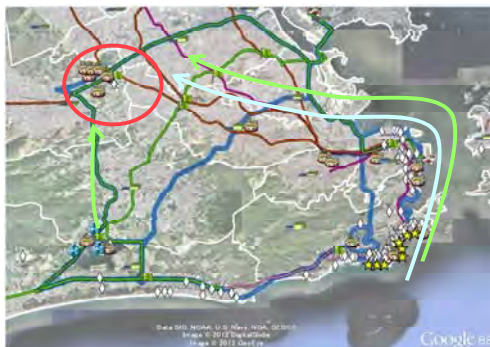
Table 3-25 Venues in Deodoro Zone

Venue
Deodoro Arena, Deodoro Modern Pentathlon Park and National Shooting Center
National Equestrian Center
X PARK

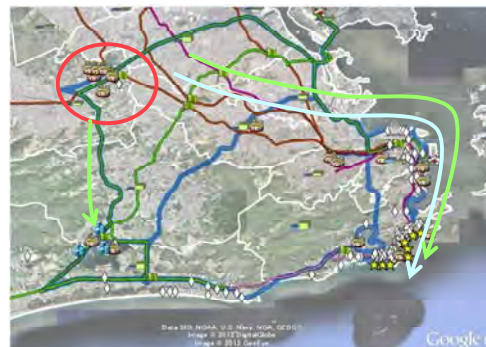
The main routes for the spectators in the Deodoro Zone are as follows:

- BRT (TransBrasil), Metro 1, and Metro 4; and
- BRT (TransCarioca).

Arrival at Deodoro



Departure from Deodoro



Legend

Olympic Related Place

- Competition Venue
- OV MV IBC/MPC
- Games Family Hotels
- Intermodal Transfer Station
- Airport
- Port
- Hotels
- BRT
- Railway
- Metro NewLine
- Metro
- Olympic Lanes

Hotel ←

House →

Figure 3-107 Main Flow of Spectators in Deodoro Zone

[Transportation System by Venue]

Venue	Deodoro Arena, Deodoro Modern Pentathlon Park and National Shooting Center
Gross Seat	Deodoro Arena (Fencing) – 5,000 Modern Pentathlon Park – 15,000 Shooting - Rifle and Pistol – 3,850 Shooting - Trap – 3,000;

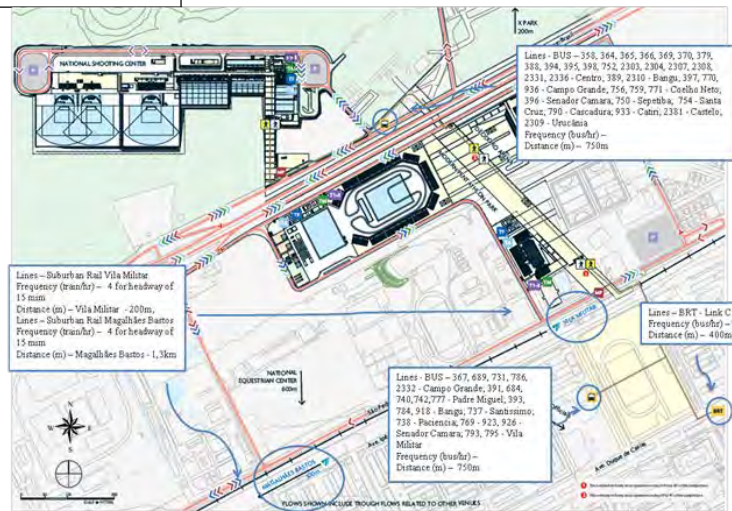


Figure 3-108 Transport System of Deodoro Arena, Deodoro Modern Pentathlon Park, and National Shooting Center

Venue	NATIONAL EQUESTRIAN CENTER
Gross Seat	Dressage, Eventing, Jumping – 14,000

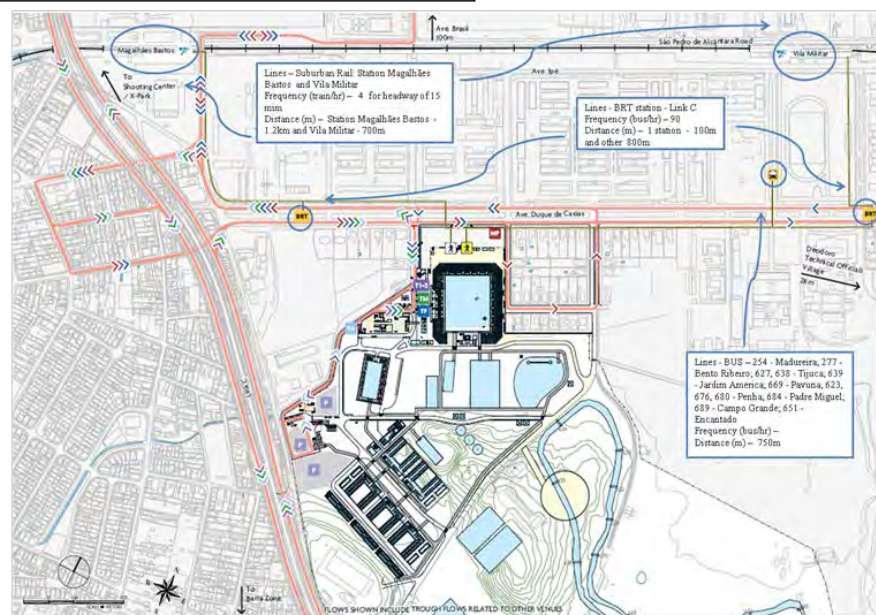


Figure 3-109 Transport System of National Equestrian Center

Venue	X PARK PRECINCT
Gross Seat	Olympic Whitewater Stadium - Canoe/Kayak (Slalom) – 8,000 Olympic BMX Center – 7,500 Olympic Mountain Bike Park – 5,000;

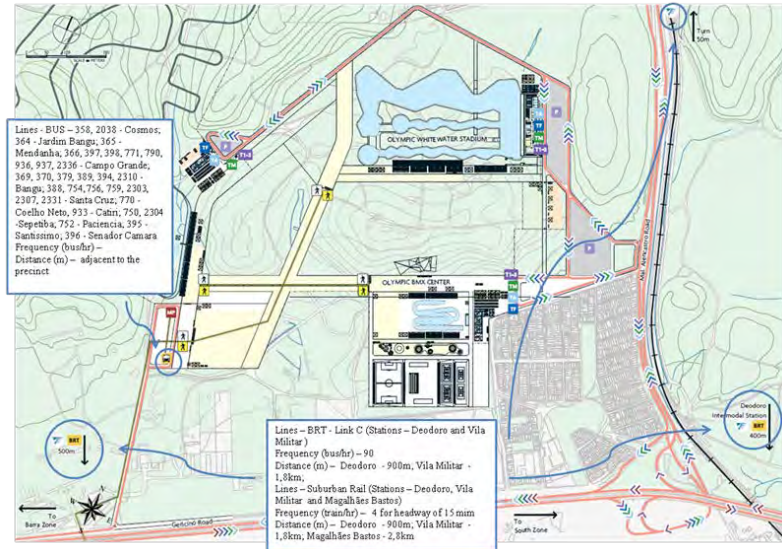


Figure 3-110 Transport System of X Park Precinct

(3) Management of Spectators Demand

Considering the main flow of spectators demand, the proposed management strategies are described as follows:

Barra

- BRT operation (vehicle control)
- BRT travel information
- BRT approach information
- Provision of information of venues

Maracana

- Train and Metro approach information
- Access information from stations to venues (direction and crowd management)

Rio Stadium

- Train approach information
- Bus location system
- Access information from stations to venues (direction and crowd management)

Copacabana

- Bus location system
- Provision of information of venues
- Event information and traveler information for hotel guests

Deodoro

- BRT operation (vehicle control)
- BRT travel information
- BRT approach information

(4) Plan for Important Points

Figure 3-111 below shows the integration points that require special attention in the transport management strategies. Such points were defined based on the main flow of spectators across the venues.

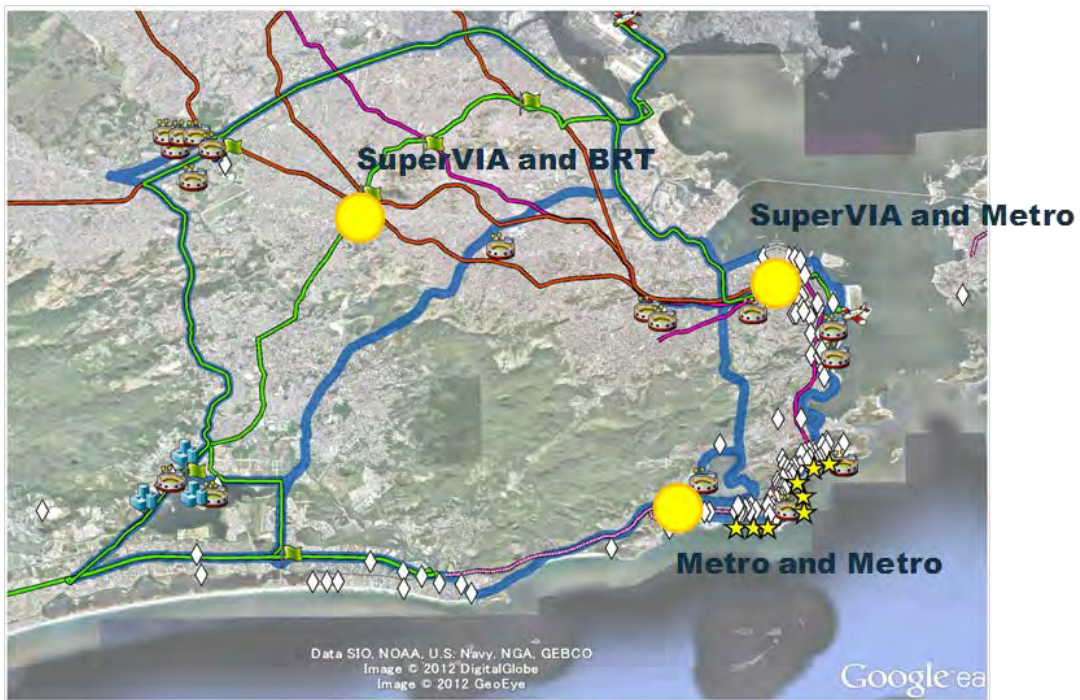


Figure 3-111 Main Integration Points for Spectators Demand

3.4.5 ITS Services for Olympic Games Transport

Considering the characteristics of background demand, Olympic Games family demand, and spectators demand, the ITS service requirements are described as follows:

- Traffic management for background and Olympic Games family demands;
- Transport management for spectators demand; and
- Event management for spectators demand.

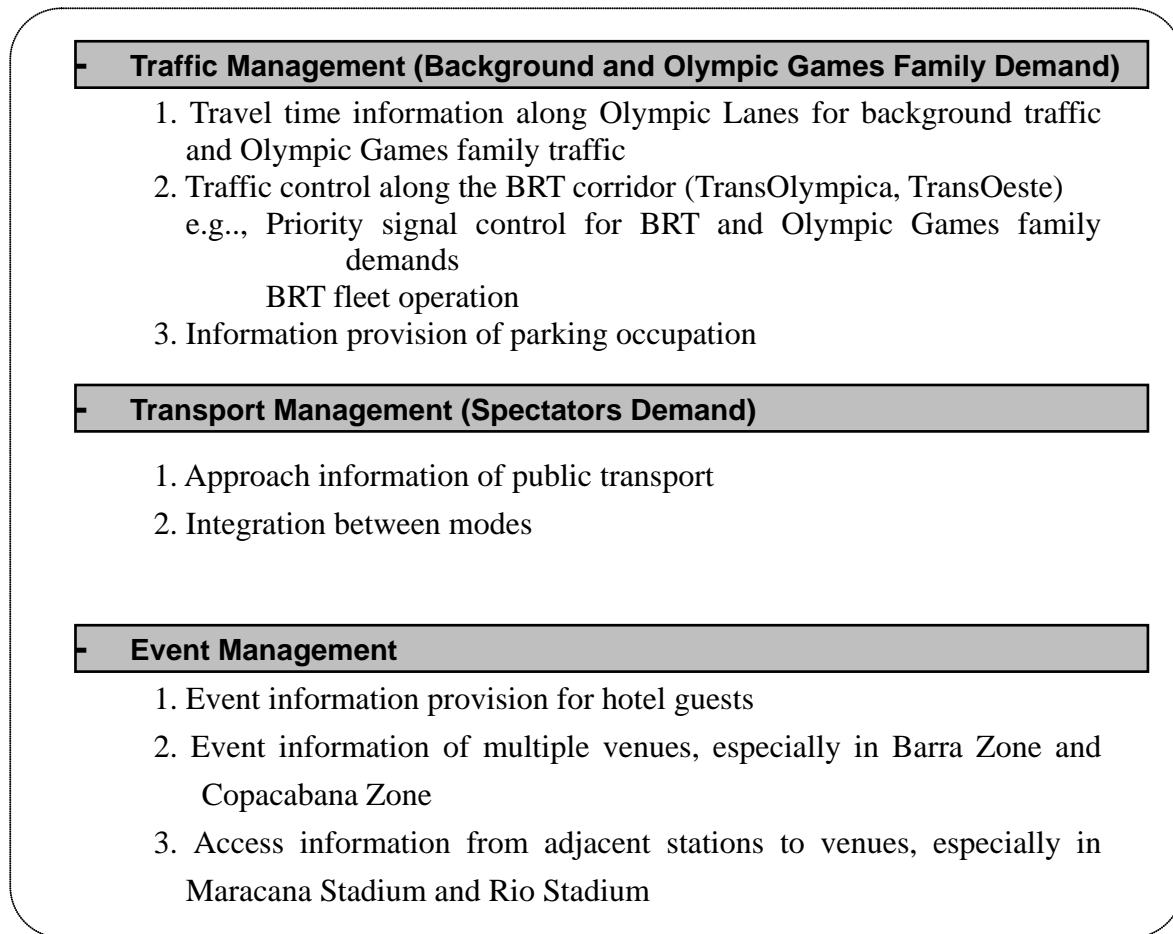


Figure 3-112 Requirement for ITS Services for Olympic Games Transport Management

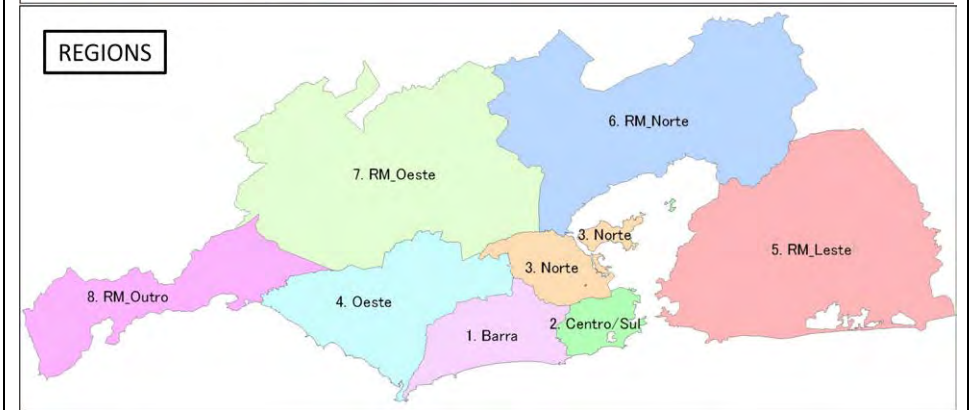
3.4.6 Venue Plan

The plans for the venues are shown in the next pages. These should be considered as detailed transport plans to be formulated in the near future.

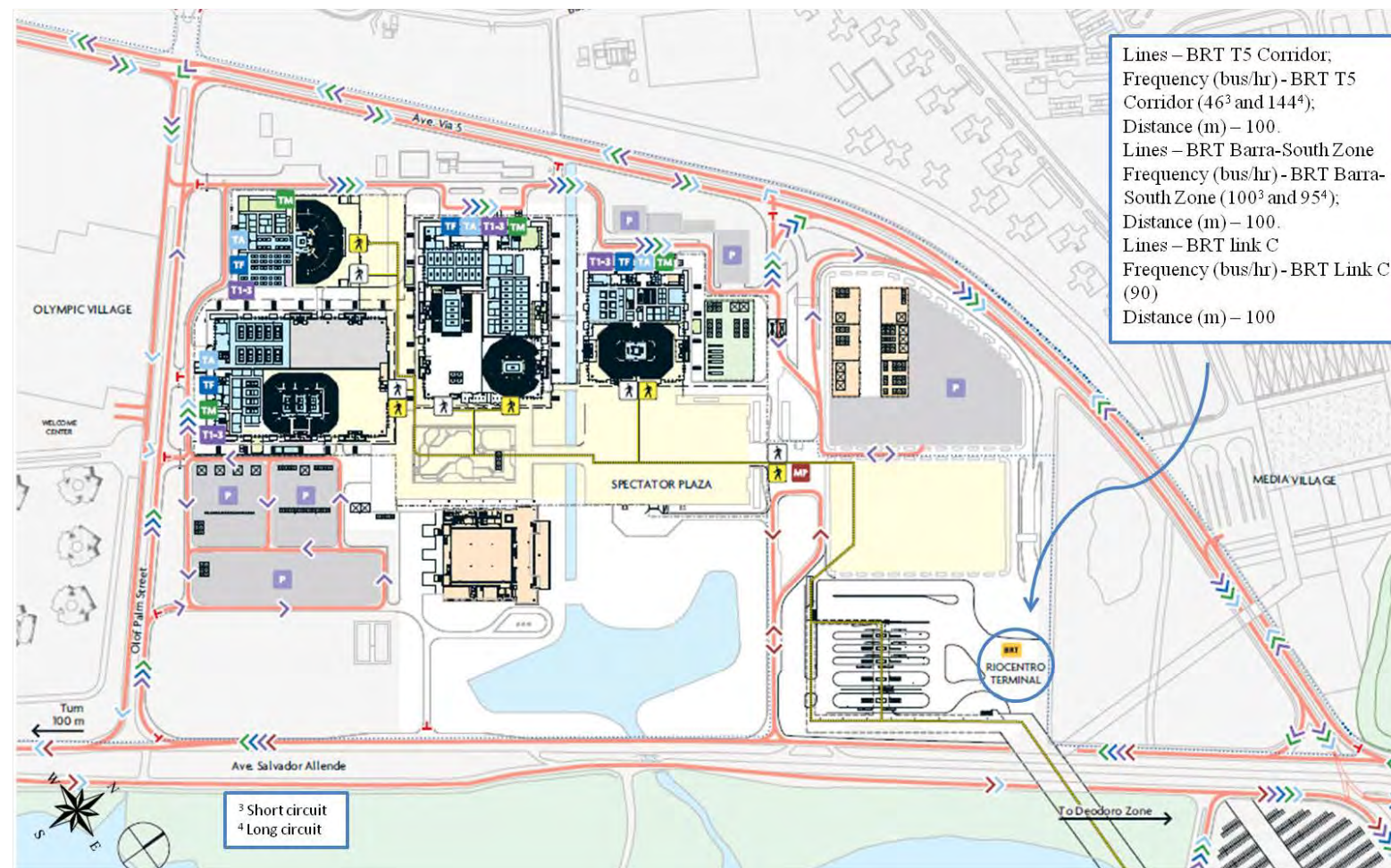
Venue	RIOCENTER					
Zone	BARRA					
Gross Seat	Olympic Games: Pavilion 2 (Boxing) – 9,000, Pavilion 3 (Table Tennis) – 7,000, Pavilion 4 (Badminton) – 6,500, Pavilion 6 (Weightlifting) – 6,500; Paralympic Games: Pavilion 3 (Table Tennis) – 7,000, Pavilion 6 (Powerlifting) – 4,550					
Spectator Transport	BRT T5 Corridor: Riocentro Terminal Station, 100 m from the precinct; BRT Barra-South Zone: Riocentro Terminal Station, 100 m from the precinct; BRT Link C: Riocentro Terminal Station, 100 m from the precinct.					
Timetable		Boxing (Olympic Games)	Table Tennis (Olympic Games)	Weightlifting (Olympic Games)	Badminton (Olympic Games)	
	Day 1	M	M/W	W/F	P	
	Day 2	M	M/W	M/W/F	P	
	Day 3	M	M/W/QF	M/W/F	P	
	Day 4	M	M/W/C/SF	M/W/F	QF	
	Day 5	M	M/W/C/SF/F	M/W/F	QF	
	Day 6	M	M/W/P/C/F		SF + F DBL	
	Day 7	M	M/W	M/W/F	SF + F SGL	
	Day 8	M	M/W	W/F	F MIX DBL	
	Day 9	M/QF	M/W/QF	M/F	F	
	Day 10	M/QF	M/W/QF/SF/F	M/F		
	Day 11	M/QF	M/SF/F	M/F		
	Day 12	M/QF				
	Day 13	REST				
	Day 14	M/SF				
	Day 15	M/F				
Day 16	M/F					

Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL- Double; SGL - Single; MIX - Mixed

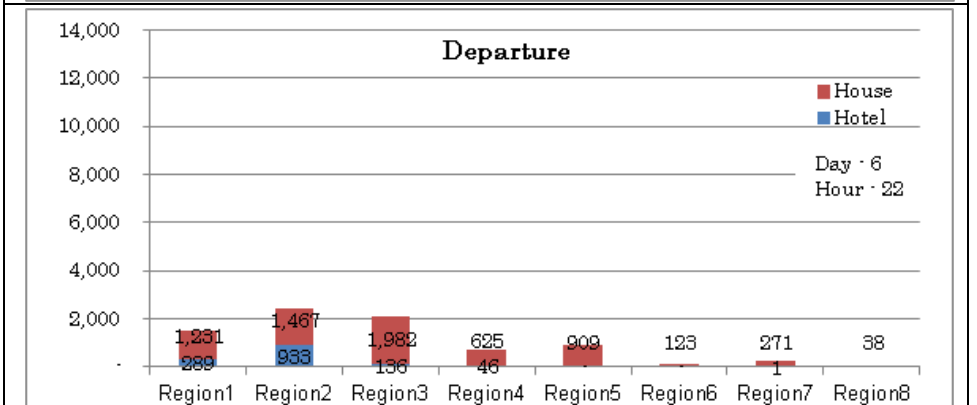
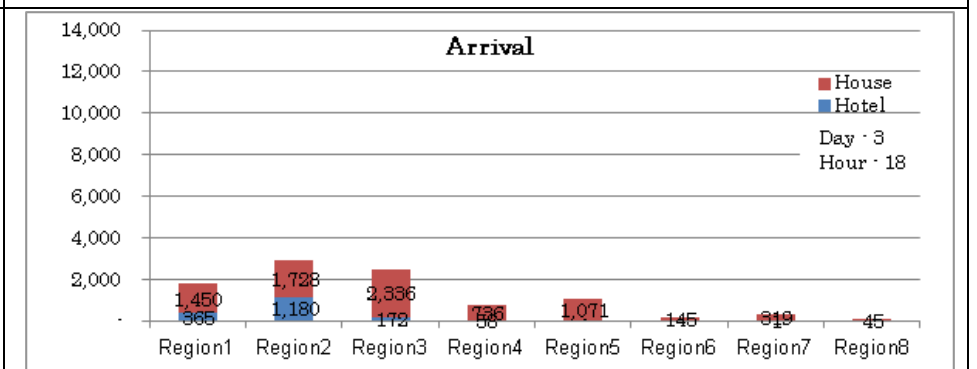
Location



Access Map



Demand (RIO CENTER)

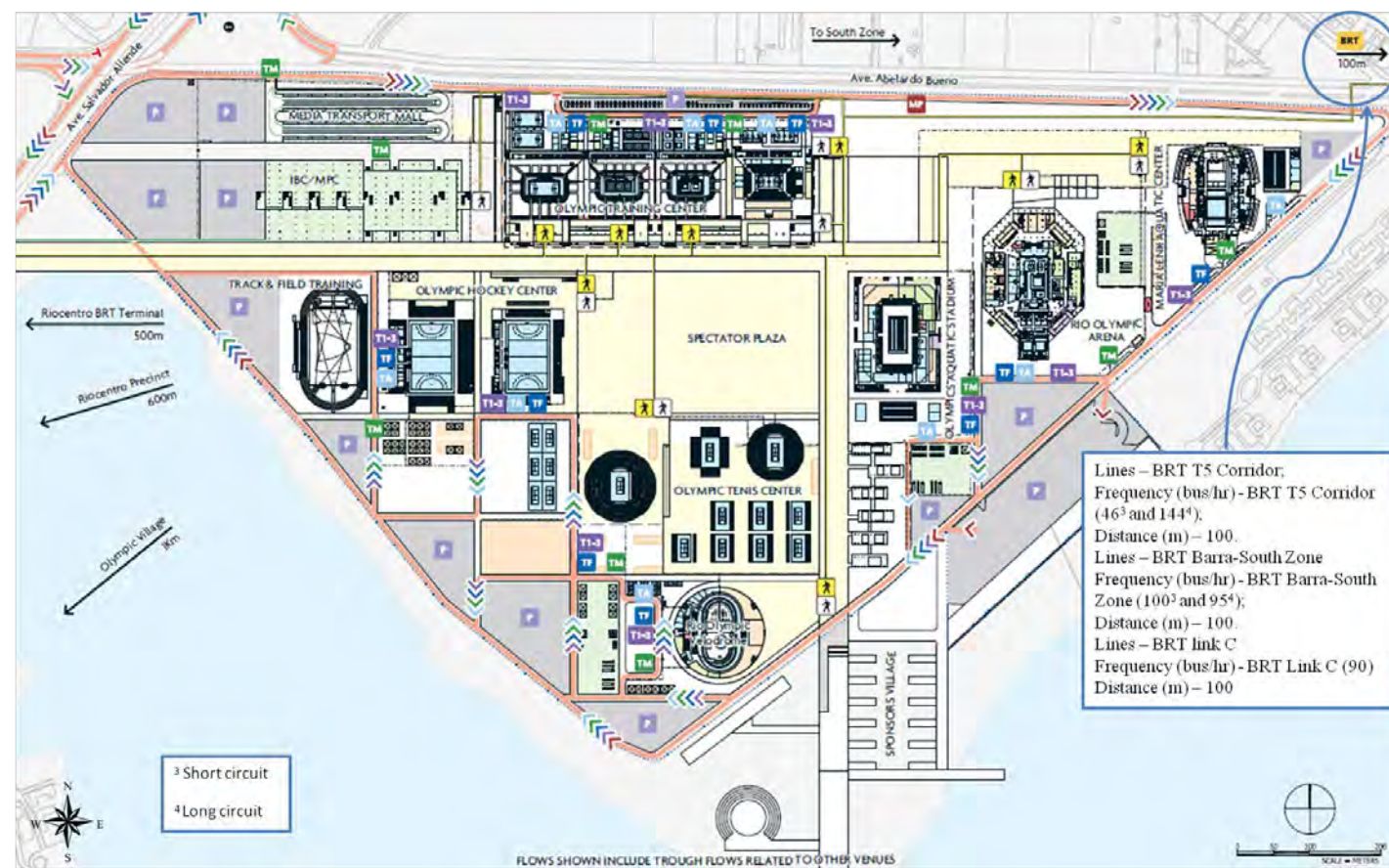


Venue	RIO OLYMPIC PARK PRECINCT - OTC						
Zone	BARRA						
Gross Seat	Olympic Games: OTC-Hall 1 (Basketball) – 6,000, OTC-Hall 2 (Judo) – 10,000, OTC-Hall 2 (Taekwondo) – 10,000, OTC-Hall 3 (Wrestling) – 10,000, OTC-Hall 4 (Handball) – 12,000; Paralympic Games: OTC-Hall 1 (Wheelchair Basketball (preliminaries only), Wheelchair Rugby) – 10,500, OTC-Hall 2 (Judo) – 7,000, OTC-Hall 2 (Boccia) – 7,000, OTC-Hall 3 (Volleyball (sitting)) – 10,000, OTC-Hall 4 (Goalball) – 7,000						
Spectator Transport	BRT T5 Corridor - 1 station, 100 m from the precinct; BRT Barra-South Zone - Riocentro Terminal Station, 500 m from the precinct; BRT Link C - Riocentro Terminal Station, 500 m from the precinct.						
Timetable		Basketball	Judo	Taekwondo	WRESTLING FREESTYLE M	WRESTLING GRECO - ROMAN	Handball
	Day 1	WP	M/W/SF/F				WP
	Day 2	MP	M/W/SF/F				MP
	Day 3	WP	M/W/SF/F				WP
	Day 4	MP	M/W/SF/F				MP
	Day 5	WP	M/W/SF/F				WP
	Day 6	MP	M/W/SF/F				MP
	Day 7	WP	M/W/SF/F			F	WP
	Day 8	MP				F	MP
	Day 9	WP				F	WP
	Day 10	MP					MP
	Day 11	W QF					W QF
	Day 12	M QF					M QF
	Day 13	W SF		M/W/QF/SF/F	M/F		W/C/SF
	Day 14	M SF		M/W/QF/SF/F	M/F		M/C/SF
	Day 15	W F		M/W/QF/SF/F	M/F		W/C/F
	Day 16	M F		M/W/QF/SF/F			M/C/F
Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL - Double; SGL - Single; MIX – Mixed							

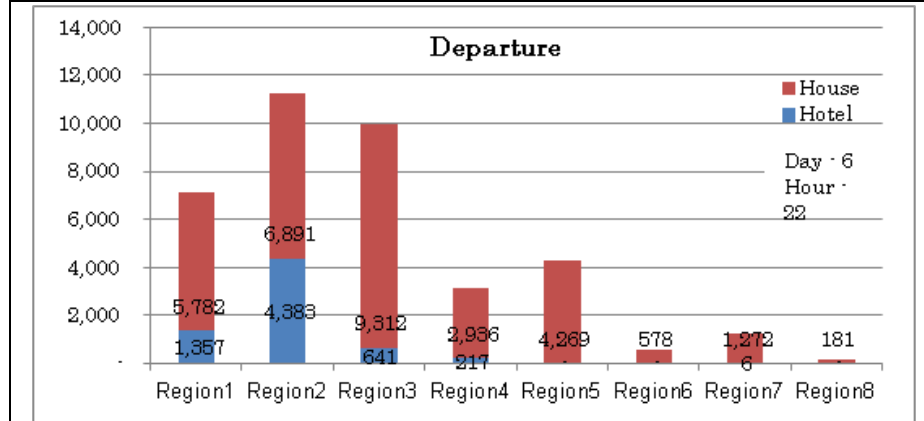
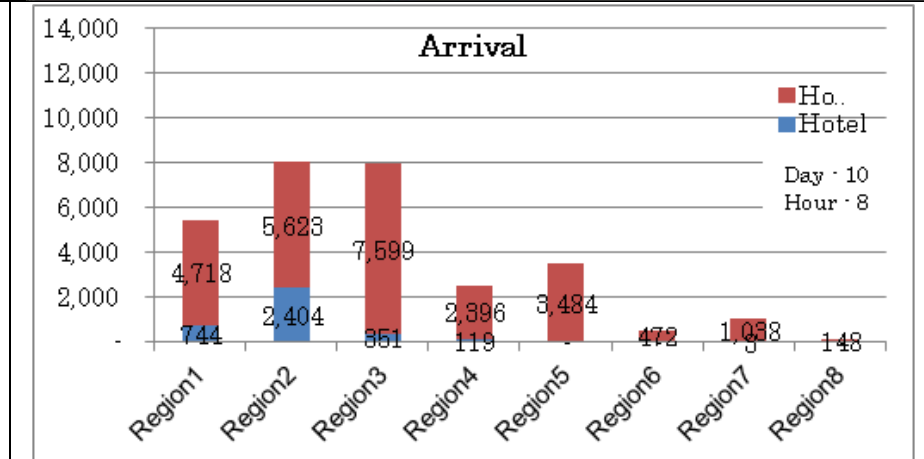
Location



Access Map



Demand (RIO OLYMPIC PARK)



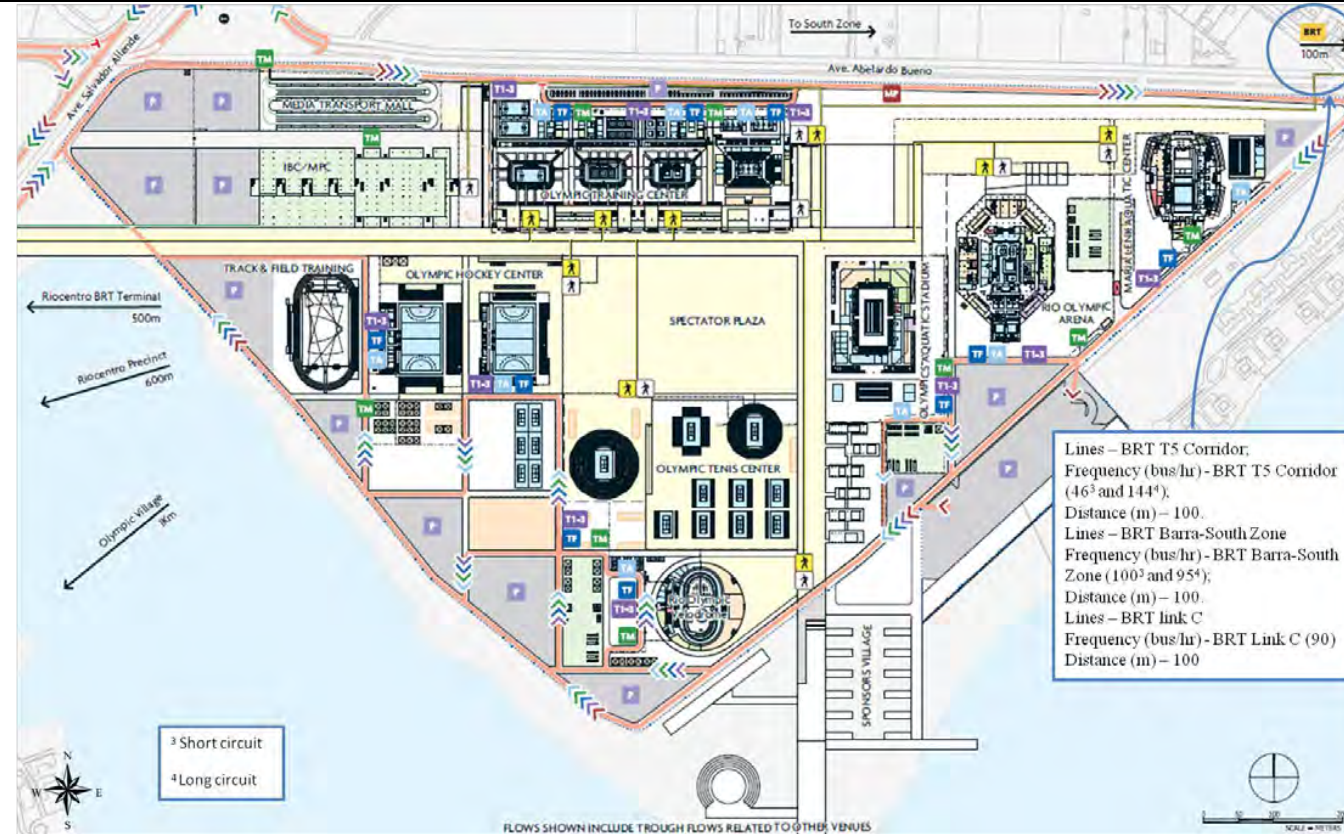
Venue	RIO OLYMPIC PARK PRECINCT - Olympic Hockey Center, Olympic Tennis Center, Rio Olympic Velodrome and Maria Lenk Aquatic Center					
Zone	BARRA					
Gross Seat	Olympic Games: Olympic Hockey Center – 15,000, Olympic Tennis Center – 19,750, Rio Olympic Velodrome (Cycling - Track) – 5,000, Maria Lenk Aquatic Center (Diving) – 6,500, Maria Lenk Aquatic Center (Water Polo) – 6,500; Paralympic Games: Rio Olympic Velodrome (Cycling - Track) – 5,000, Olympic Hockey Center (Football 5-a-side) – 5,000, Olympic Hockey Center (Football 7-a-side) – 10,000, Olympic Aquatics Stadium (Swimming) – 18,000, Rio Olympic Arena (Wheelchair Basketball) – 12,000, Olympic Tennis Center (Wheelchair Tennis) – 10,000					
Spectator Transport	BRT T5 Corridor - 1 station, 100 m from the precinct; BRT Barra-South Zone - Riocentro Terminal Station, 500 m from the precinct; BRT Link C - Riocentro Terminal Station, 500 m from the precinct.					
Timetable		Hockey	Tennis	Cycling (Track)	Diving	Water Polo
	Day 1		-			MP
	Day 2	W P	-			W P
	Day 3	M P	-			MP
	Day 4	W P	-		P/SF	W P
	Day 5	M P	-		F	MP
	Day 6	W P	-	F	P/SF	W P
	Day 7	M P	-	F	F	MP
	Day 8	W P	M/W/SF	F	P/SF	W QF
	Day 9	M P	F	F	F	MP
	Day 10	W P	F	F	P/SF	W/SF
	Day 11	M P			F	M QF
	Day 12	W/SF			F	W F
	Day 13	M/SF			F	M/C/SF
	Day 14	W/F				
	Day 15	M/F				M/C/F
	Day 16					

Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL - Double; SGL - Single; MIX - Mixed

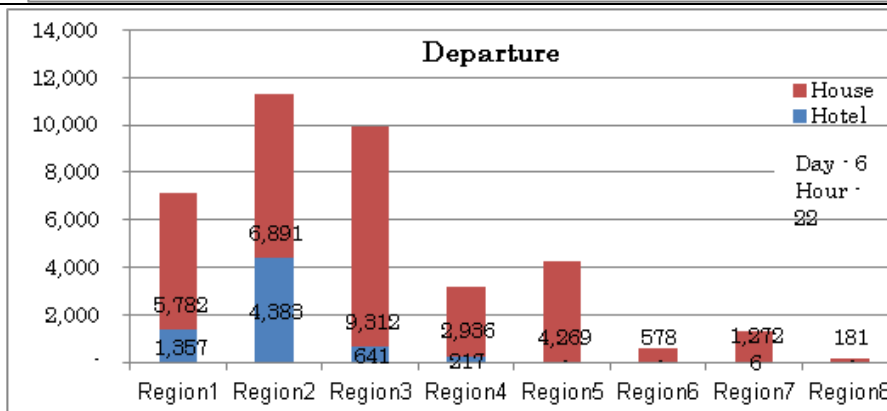
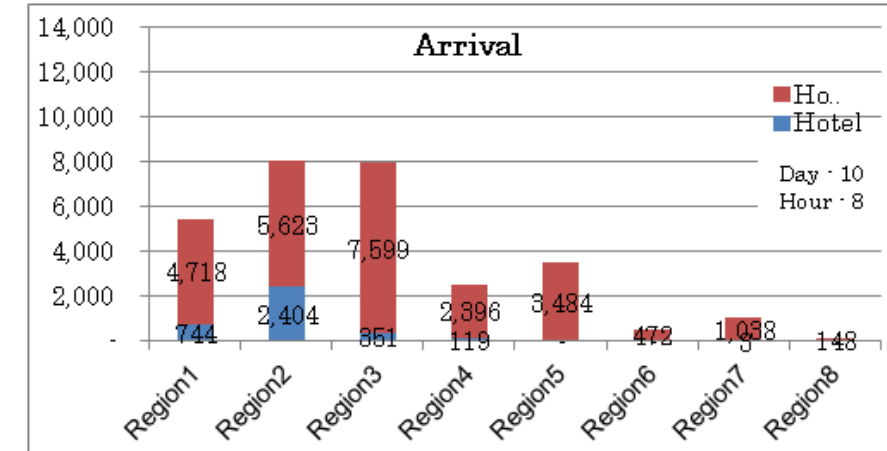
Location



Access Map

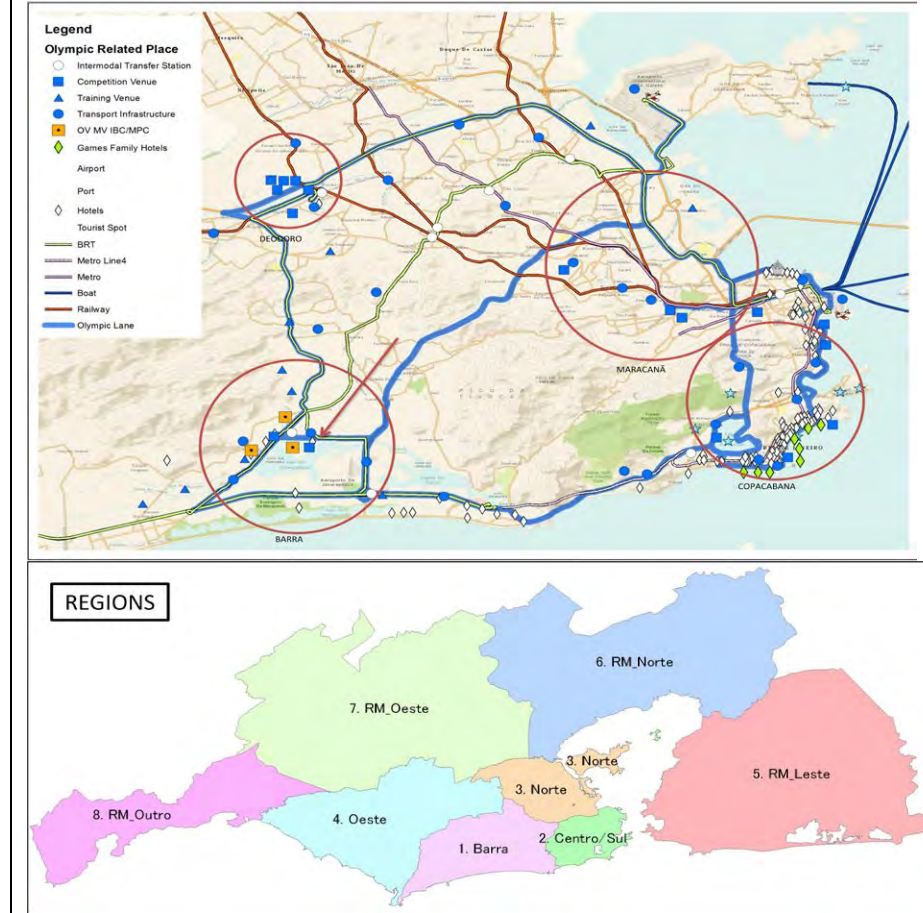


Demand (RIO OLYMPIC PARK)

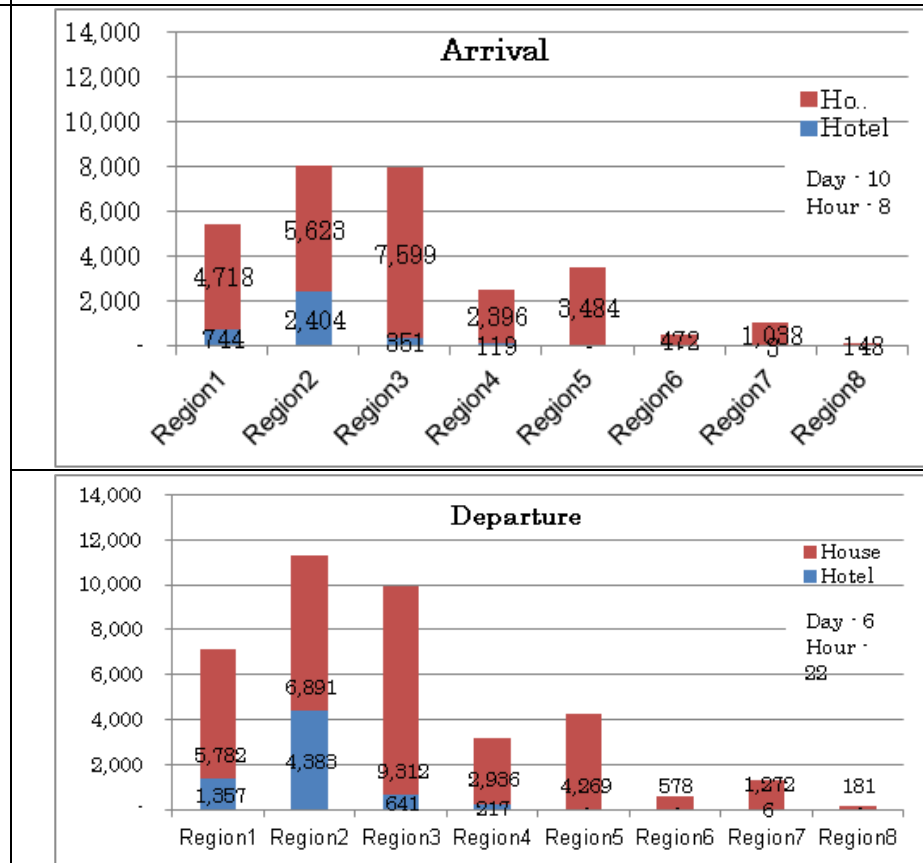


Venue	RIO OLYMPIC PARK PRECINCT - Olympic Aquatics Stadium and Rio Olympic Arena					
Zone	BARRA					
Gross Seat	Olympic Games: Olympic Aquatics Stadium (Swimming, Synchronized Swimming) – 18,000, Rio Olympic Arena (Gymnastics Artistic, Rhythmic) – 12,000, Rio Olympic Arena (Trampoline) – 12,000; Paralympic Games: Olympic Aquatics Stadium (Swimming) – 18,000, Rio Olympic Arena (Wheelchair Basketball) – 12,000, Olympic Tennis Center (Wheelchair Tennis) – 10,000					
Spectator Transport	BRT T5 Corridor - 1 station, 100 m from the precinct; BRT Barra-South Zone - Riocentro Terminal Station, 500 m from the precinct; BRT Link C - Riocentro Terminal Station, 500 m from the precinct.					
Timetable		Swimming	Synchronized Swimming	Gymnastics - Artistic	Gymnastics - Rhythmic	Gymnastics - Trampoline
	Day 1	P/SF		CI - M		
	Day 2	P/SF/F		CI - W		
	Day 3	P/SF/F		CIV -M		
	Day 4	P/SF/F		CIV-W		
	Day 5	P/SF/F				QF M
	Day 6	P/SF/F		CII M		
	Day 7	SF/F		CII W		
	Day 8	F				QF W
	Day 9			CIII - W/M		
	Day 10			CIII - W/M	RG Podium	
	Day 11		P		RG Podium	
	Day 12		P		RG Qual IND & Group	
	Day 13				RG Final IND	
	Day 14		F		RG Final Group	
	Day 15		F		GALA	
	Day 16					
Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL - Double; SGL - Single; MIX - Mixed						

Location



Demand (RIO OLYMPIC PARK)

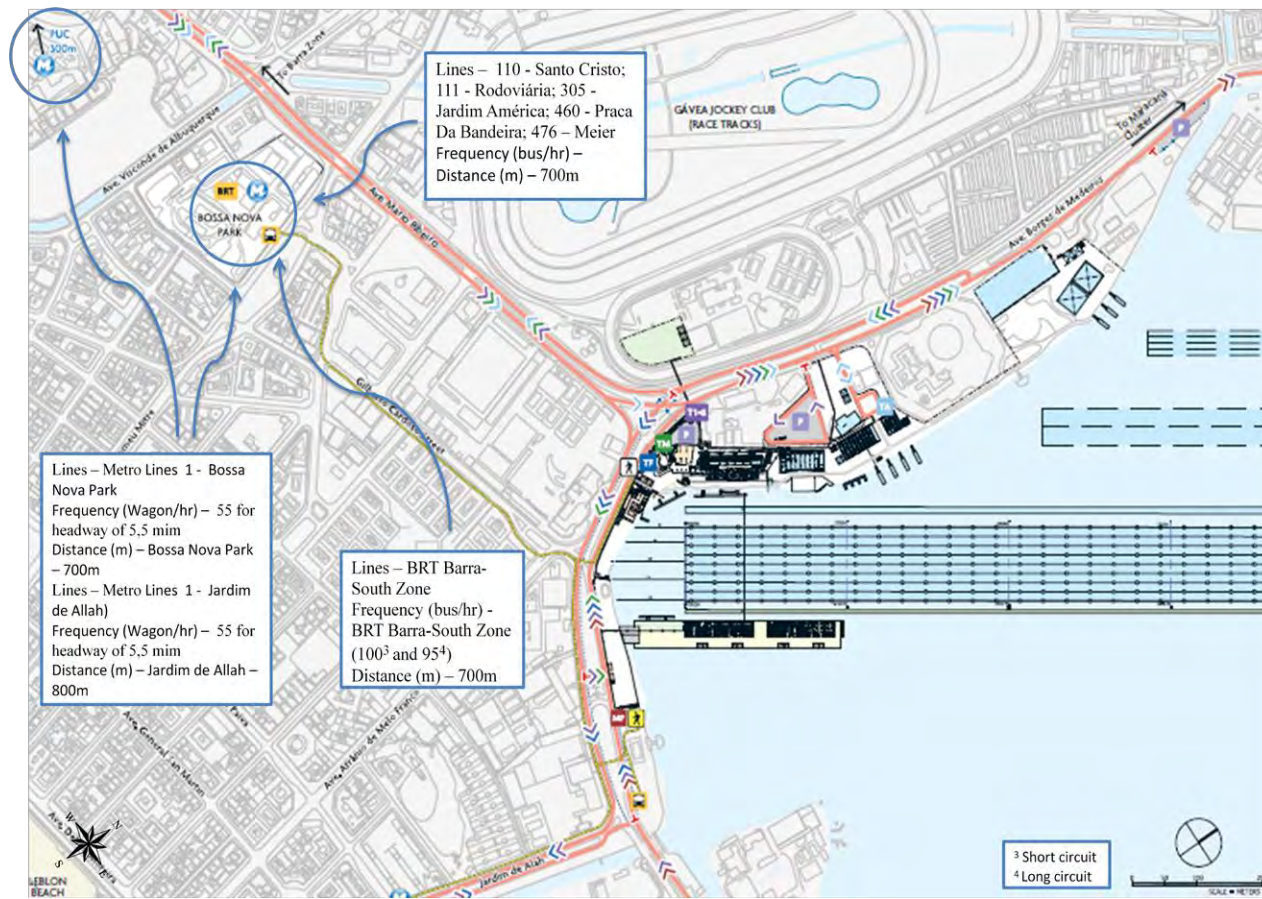


Venue	LAGOA RODRIGO DE FREITAS						
Zone	COPACABANA						
Gross Seat	Olympic Games: Rowing and Canoe/Kayak (Flatwater) – 14,000; Paralympic Games: Rowing – 7,000						
Spectator Transport	Bossa Nova Park Terminal Station, 700 m from the venue; Metro: Bossa Nova Park Station, 700 m from the venue; Metro: Jardim de Allah Station, 800 m from the venue; Lagoa Rodrigo de Freitas spectators shuttle service to the BRT and Metro stations (Bossa Nova Park, Jardim de Allah).						
Timetable		Rowing	Canoe/Kayak (Flatwater)				
	Day 1	M/W					
	Day 2	M/W					
	Day 3	M/W					
	Day 4	M/W					
	Day 5	M/W					
	Day 6	M/W					
	Day 7						
	Day 8	M/W/F					
	Day 9	M/W/F					
	Day 10						
	Day 11			P			
	Day 12			P			
	Day 13			P			
	Day 14			P			
	Day 15			F			
	Day 16			F			
Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL - Double; SGL - Single; MIX - Mixed							

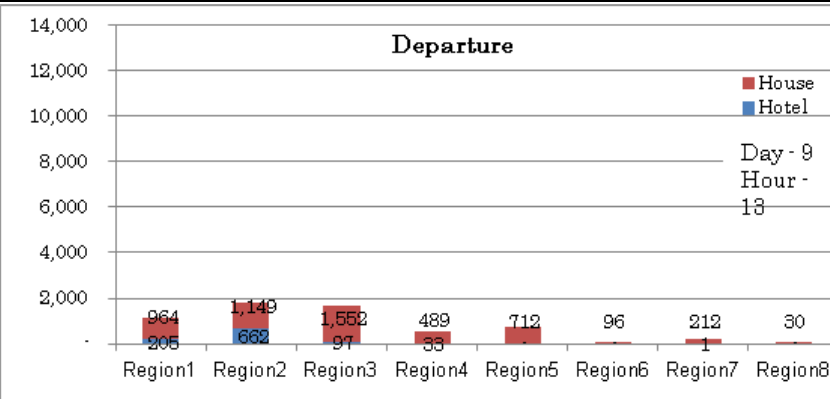
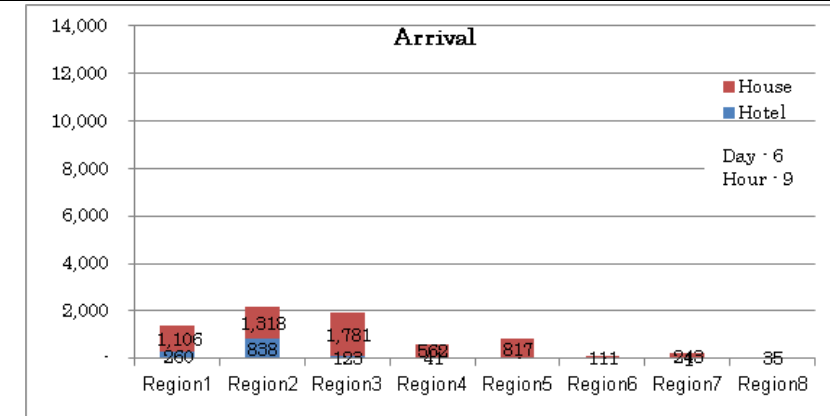
Location



Access Map



Demand (LAGOA RODRIGO DE FREITAS)



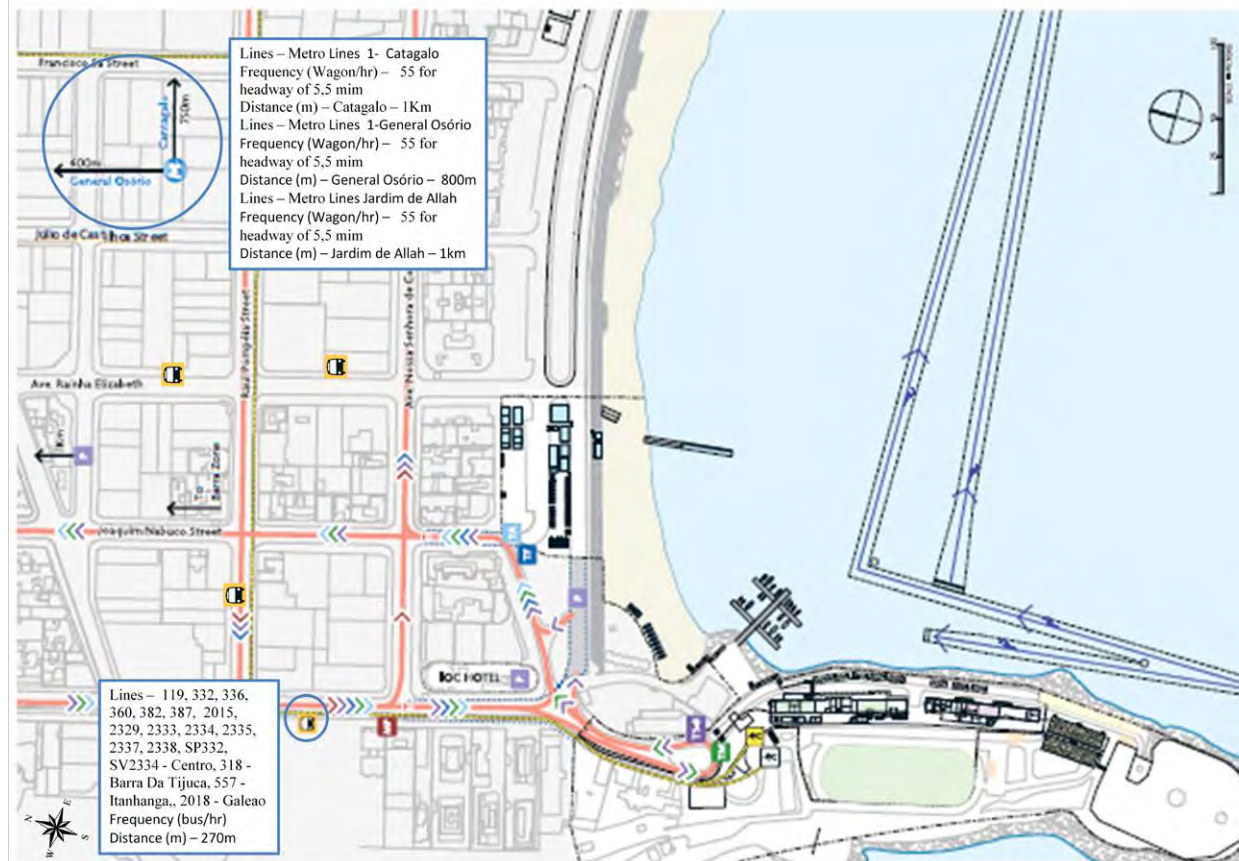
Venue	FORT COPACABANA					
Zone	COPACABANA					
Gross Seat	Olympic Games: Marathon Swimming – 5,000, Triathlon – 5,000					
Spectator Transport	Metro: General Osório Station, 800 m from the venue; Metro: Cantagalo Station, 1 km from the venue; Bus services: Various connections provided.					
Timetable		Marathon Swimming	Triathlon			
	Day 1					
	Day 2					
	Day 3					
	Day 4	W/F				
	Day 5	W/F				
	Day 6					
	Day 7					
	Day 8					
	Day 9					
	Day 10			W/F		
	Day 11			W/F		
	Day 12					
	Day 13					
	Day 14					
	Day 15					
	Day 16					

Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL - Double; SGL - Single; MIX - Mixed

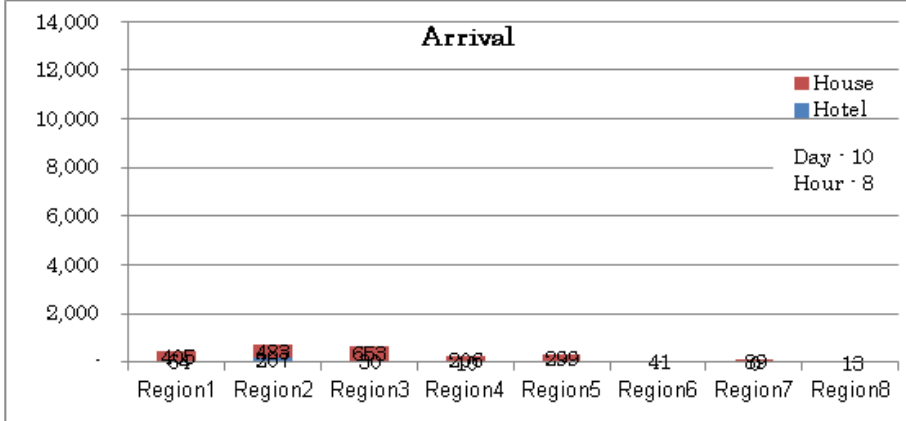
Location



Access Map



Demand (FORT COPACABANA)



DEPARTURE – NO DATA

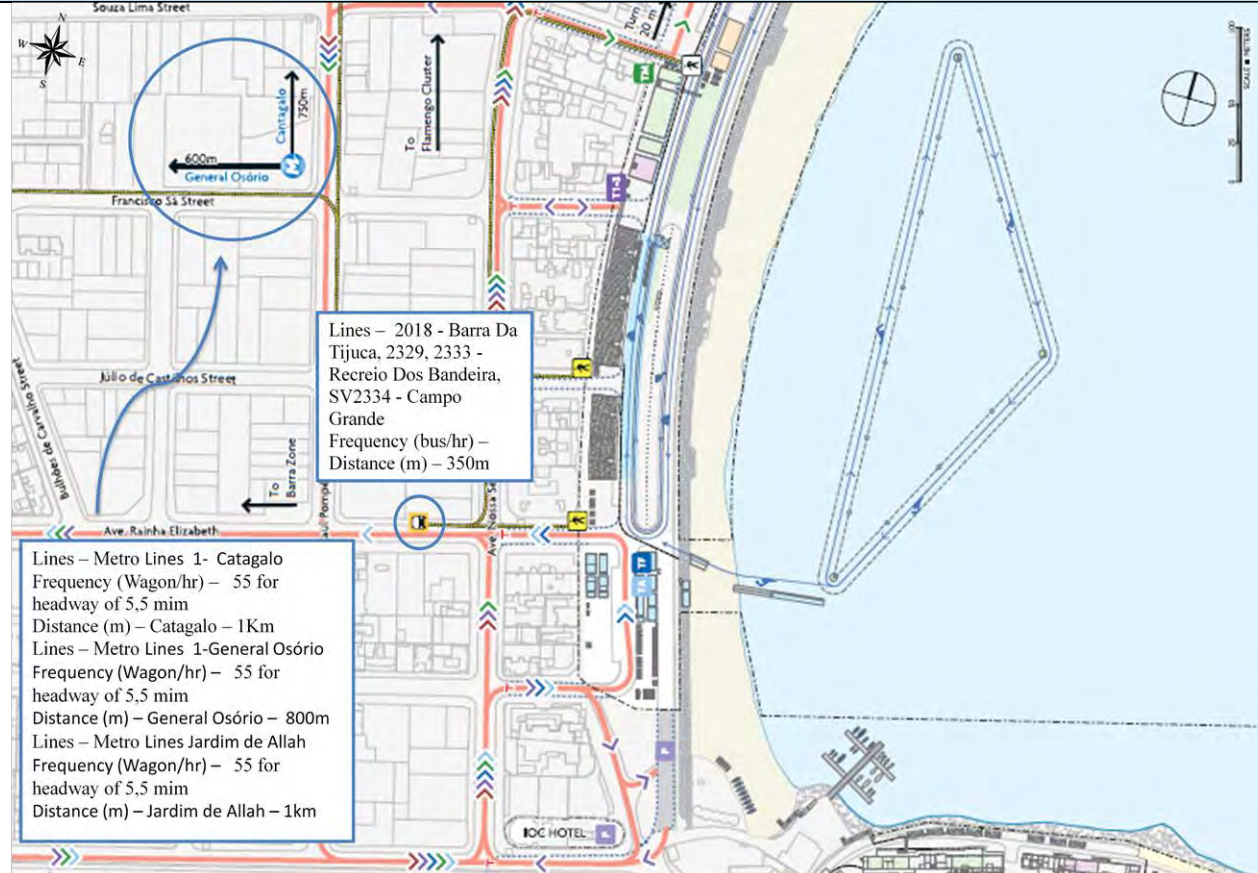
Venue	FORT COPACABANA					
Zone	COPACABANA					
Gross Seat	Olympic Games: Marathon Swimming – 5,000, Triathlon – 5,000					
Spectator Transport	Metro: General Osório Station, 800 m from the venue; Metro: Cantagalo Station, 1 km from the venue; Bus services: Various connections provided.					
Timetable		Marathon Swimming	Triathlon			
	Day 1					
	Day 2					
	Day 3					
	Day 4	W/F				
	Day 5	W/F				
	Day 6					
	Day 7					
	Day 8					
	Day 9					
	Day 10			W/F		
	Day 11			W/F		
	Day 12					
	Day 13					
	Day 14					
	Day 15					
	Day 16					

Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL - Double; SGL - Single; MIX - Mixed

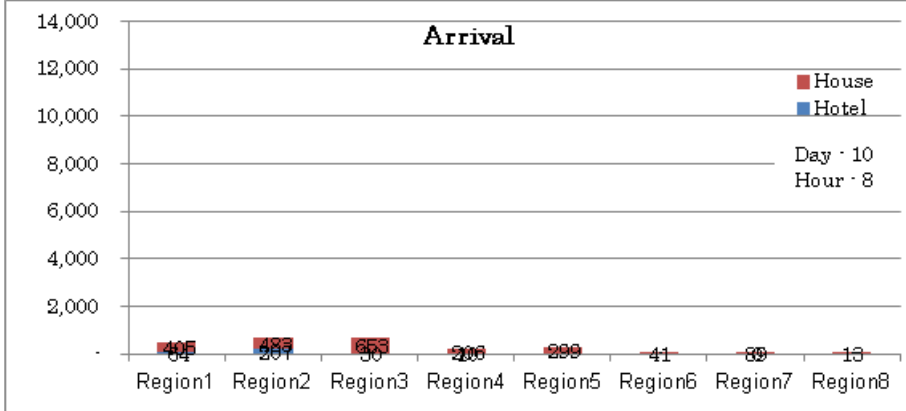
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Access Map



Demand (FORT COPACABANA)



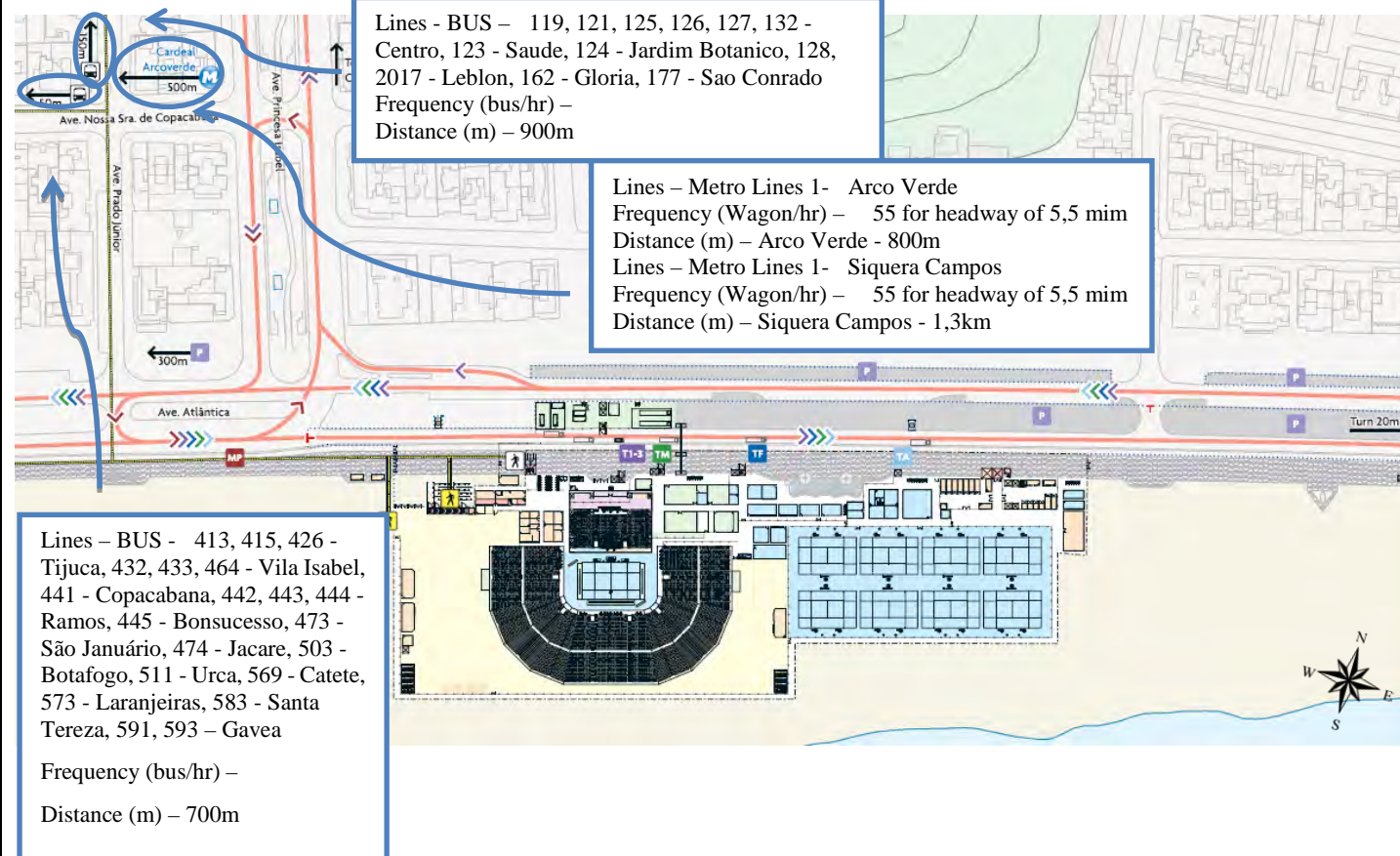
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Venue	COPACABANA STADIUM					
Zone	COPACABANA					
Gross Seat	Olympic Games: Volleyball (Beach) – 12,000					
Spectator Transport	Metro: Arco Verde Station, 800 m from the venue; Metro: Siquera Campos Station, 1.3 km from the venue; Bus services: Various connections provided.					
Timetable	Volleyball (Beach)					
	Day 1					
	Day 2	W / M				
	Day 3	W / M				
	Day 4	W / M				
	Day 5	W / M				
	Day 6	W / M				
	Day 7	W / M				
	Day 8	W / M				
	Day 9	W QF				
	Day 10	M QF				
	Day 11	W SF				
	Day 12	M SF				
	Day 13	W F				
	Day 14	M F				
	Day 15					
	Day 16					
Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL - Double; SGL - Single; MIX - Mixed						

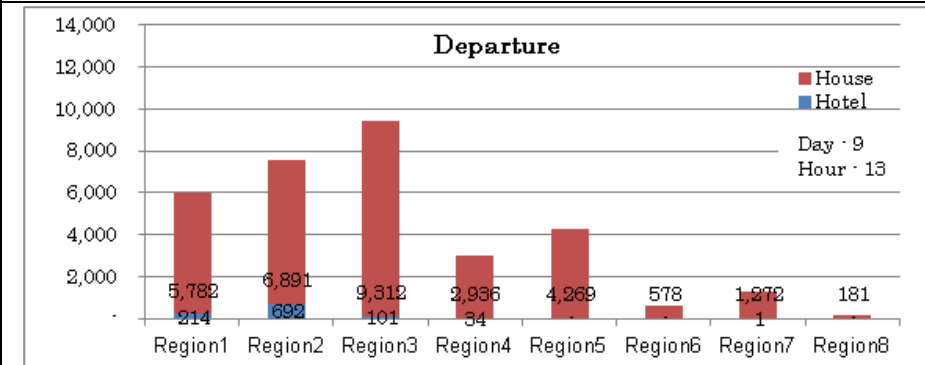
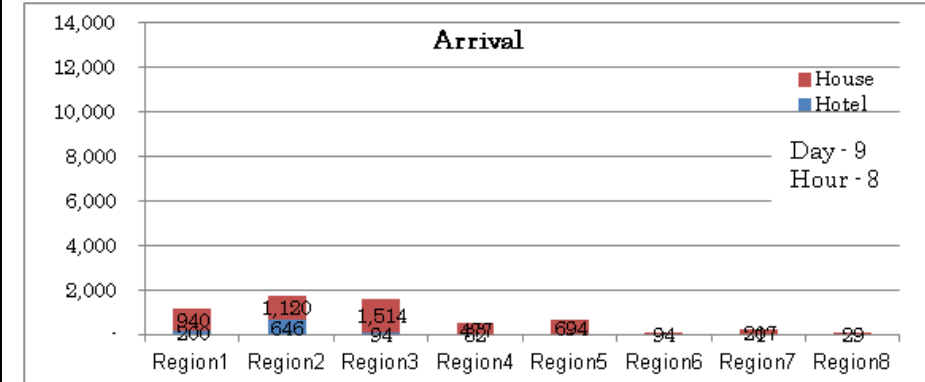
Location



Access Map



Demand (COPACABANA STADIUM)

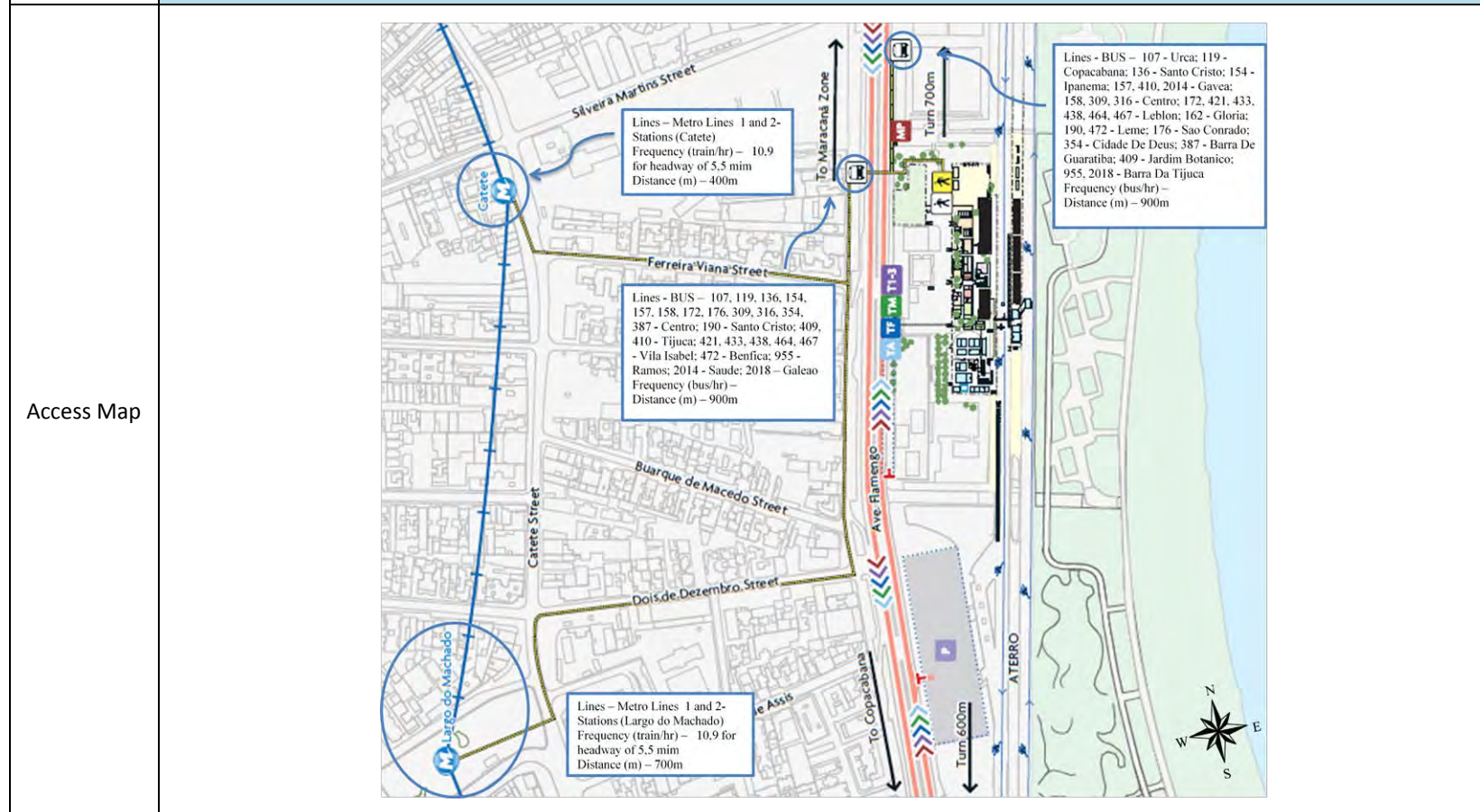


Venue	FLAMENGO PARK CLUSTER
Zone	COPACABANA
Gross Seat	Olympic Games: Athletics (Race Walk) – 5,000; Cycling (Road) – 5,000; Paralympic Games: Athletics (Marathon) – 2,500; Cycling (Road) – 2,500
Spectator Transport	Metro: Catete Station, 400 m from the cluster; Metro: Largo do Machado Station, 700 m from the cluster; Bus services: Various connections provided.

Timetable	RACE WALK		ROAD CYCLING			
	Day 1			M/F		
Day 2				W/F		
Day 3						
Day 4						
Day 5				M/W/F		
Day 6						
Day 7						
Day 8	M 20 km/F					
Day 9						
Day 10						
Day 11						
Day 12	W 20 km/F					
Day 13						
Day 14						
Day 15	M 50 km/F					
Day 16						

Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL - Double; SGL - Single; MIX - Mixed

Location



Demand (FLAMENGO PARK CLUSTER)

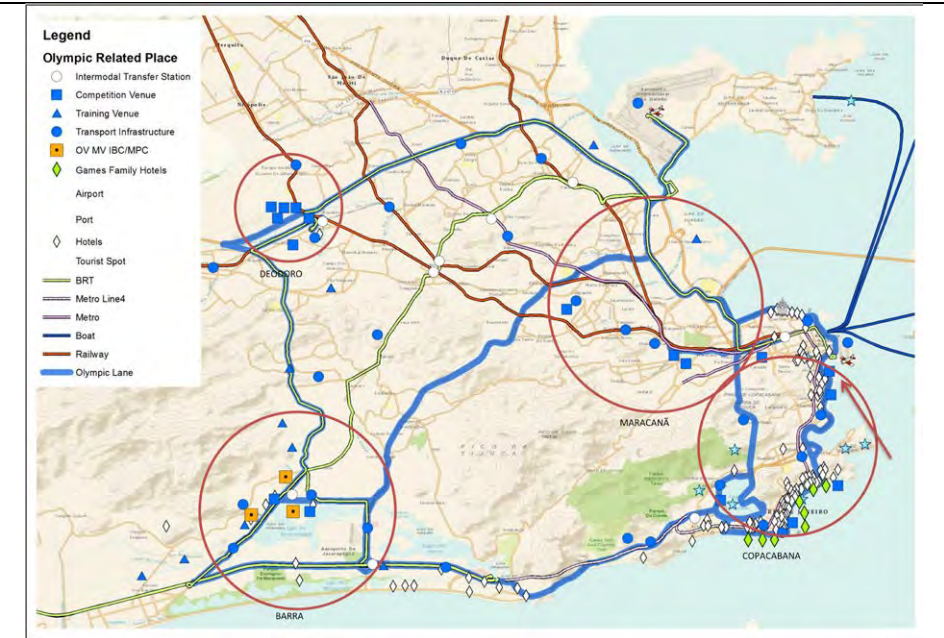
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DEPARTURE - NO DATA

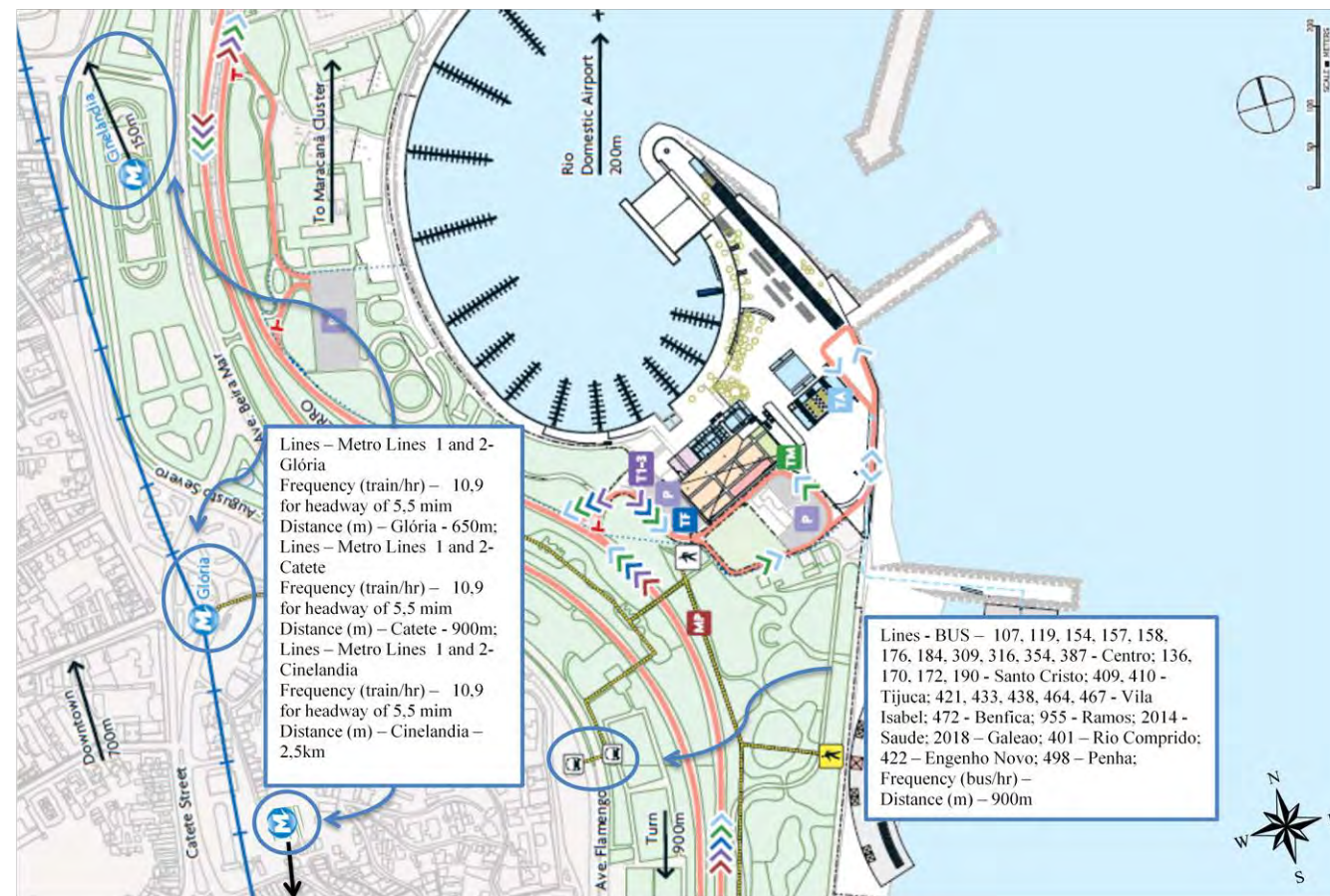
Venue	MARINA DA GLORIA					
Zone	COPACABANA					
Gross Seat	Olympic Games: Sailing – 10,000					
Spectator Transport	Metro: Glória Station, 650 m from the cluster; Metro: Catete Station, 900 m from the cluster; Metro: Cinelândia Station, 2.5 km from the cluster; Bus services: Various connections provided.					
Timetable	Sailing					
	Day 1					
	Day 2	-				
	Day 3	-				
	Day 4	-				
	Day 5	-				
	Day 6	-				
	Day 7	-				
	Day 8	-				
	Day 9	F				
	Day 10	F				
	Day 11	F				
	Day 12	F				
	Day 13	F				
	Day 14	F				
	Day 15					
	Day 16					

Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL- Double; SGL - Single; MIX - Mixed

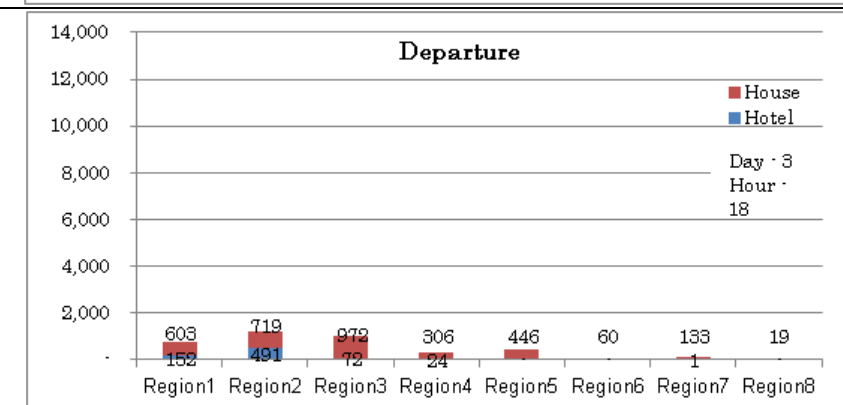
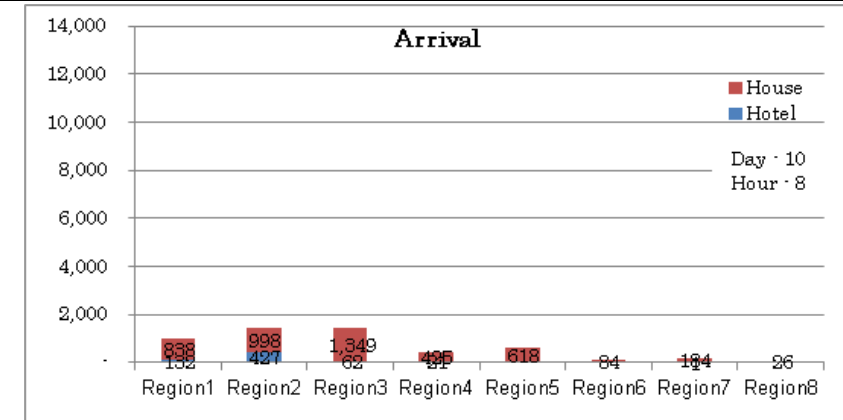
Location



Access Map



Demand (MARINA DA GLORIA)

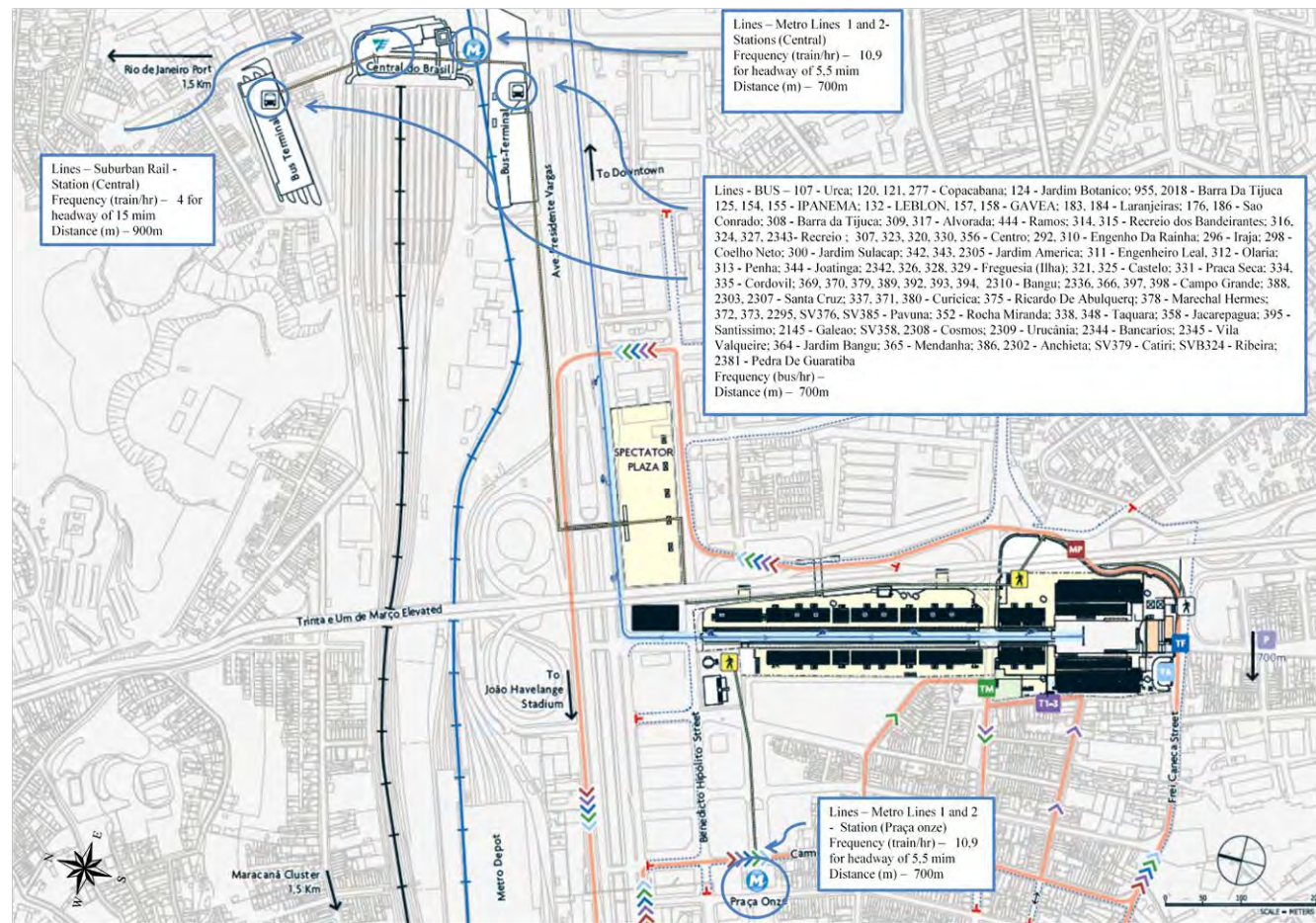


Venue	SAMBODROMO					
Zone	MARACANÃ					
Gross Seat	Olympic Games: Archery – 6,000 , Marathon – 30,000; Paralympic Games: Archery – 4,200					
Spectator Transport	Suburban Rail: Central Station, 700 m from the venue; Metro: Central Station, 700 m from the venue; Metro: Praça Onze Station, adjacent to the venue; Metro: Cidade Nova Station, 900 m from the venue; Bus services: Various connections provided.					
Timetable		Archery	Marathon W	Marathon M		
	Day 1	M/W/C				
	Day 2	W/F				
	Day 3	M/F				
	Day 4	W/C				
	Day 5	W/C				
	Day 6	W/F				
	Day 7	W/F				
	Day 8					
	Day 9		W/F			
	Day 10					
	Day 11					
	Day 12					
	Day 13					
	Day 14					
	Day 15					
Day 16				M/F		
Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL - Double; SGL - Single; MIX - Mixed						

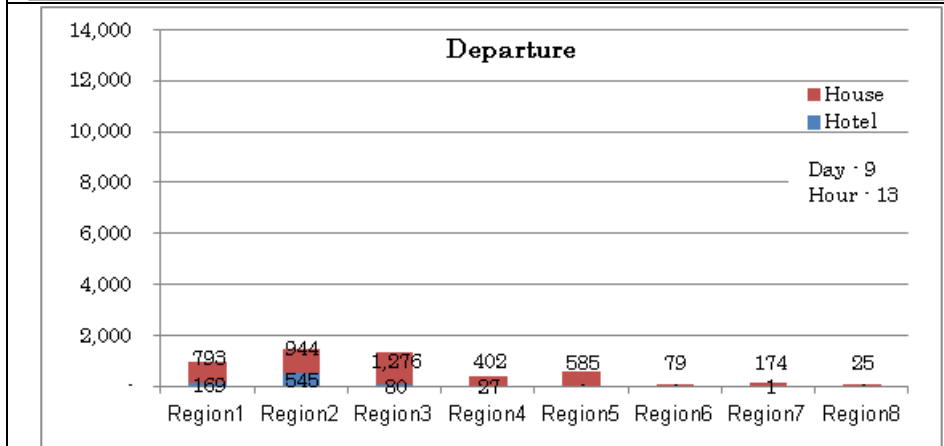
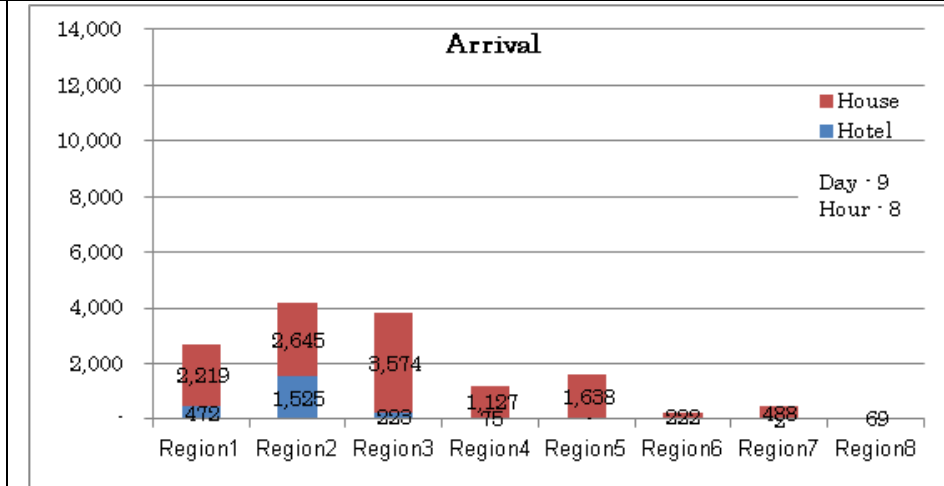
Location



Access Map



Demand



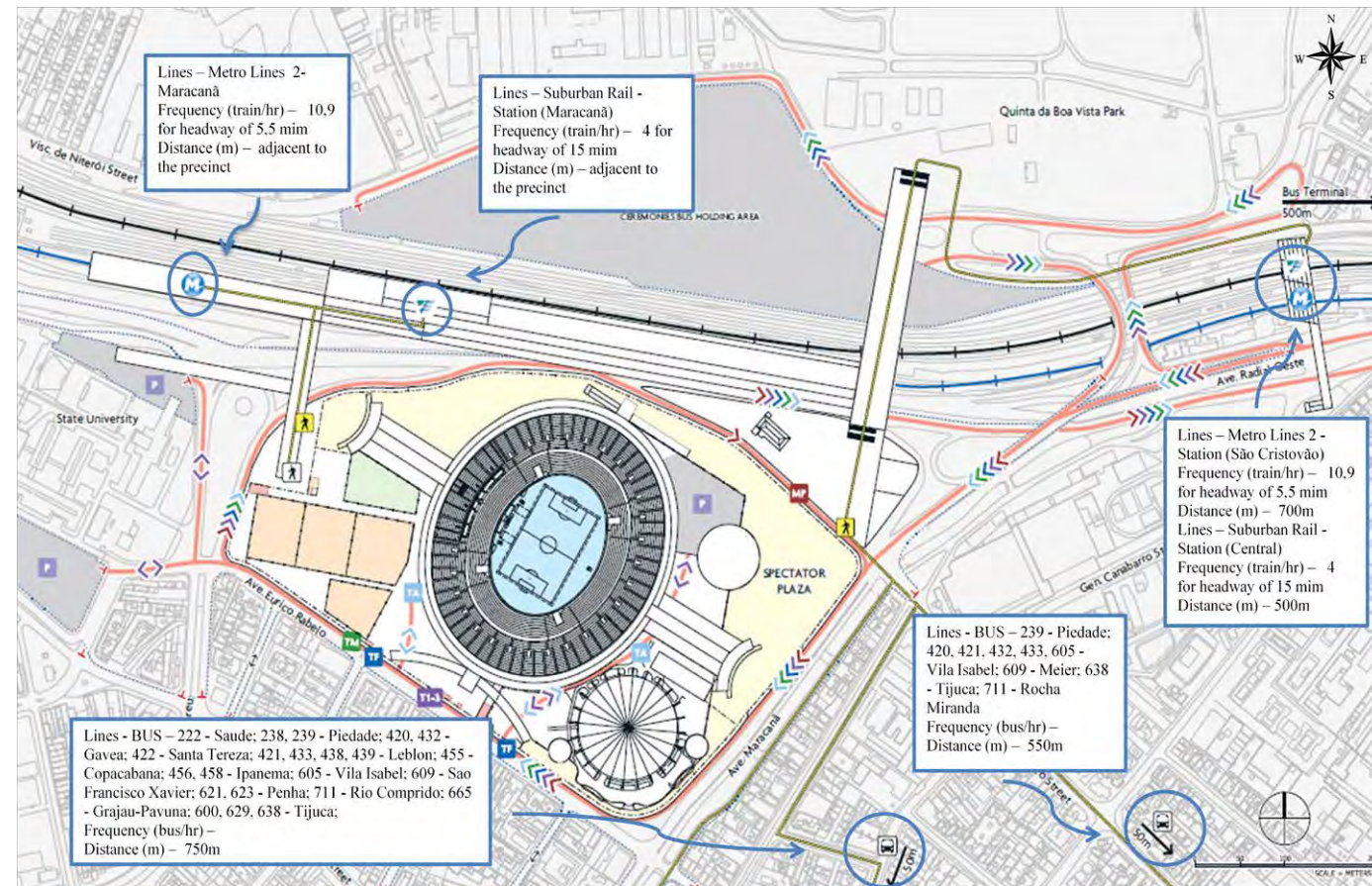
Venue	MARACANÁ STADIUM and MARACANÁZINHO ARENA				
Zone	MARACANÁ				
Gross Seat	Olympic Games: Maracanã Stadium (Football Finals) – 90,000, Maracanãzinho Arena (Volleyball) – 12,000, Maracanã Stadium (Opening and Closing Ceremonies) – 90,000; Paralympic Games: Maracanã Stadium (Opening and Closing Ceremonies) – 90,000				
Spectator Transport	Suburban Rail: Maracanã Station, adjacent to the precinct; Suburban Rail: São Cristóvão Station, 700 m from the precinct; Metro: Maracanã Station, adjacent to the precinct; Metro: São Cristóvão Station, 700 m from the precinct; Bus services: Various connections provided.				
Timetable		Football	Volleyball	Opening and Closing Ceremonies	
	Day 0				
	Day 1		WP		
	Day 2		MP		
	Day 3		WP		
	Day 4	W P	MP		
	Day 5		WP		
	Day 6		MP		
	Day 7		WP		
	Day 8		MP		
	Day 9		WP		
	Day 10	W/SF	MP		
	Day 11	M/SF	W QF		
	Day 12	REST	M QF		
	Day 13	W/F	W SF		
	Day 14	M/F	M SF		
	Day 15		W F		
Day 16		M F			

Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL- Double; SGL - Single; MIX - Mixed

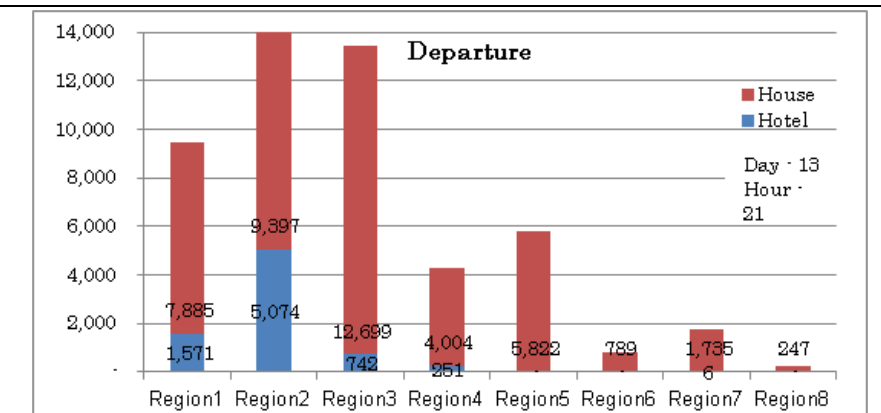
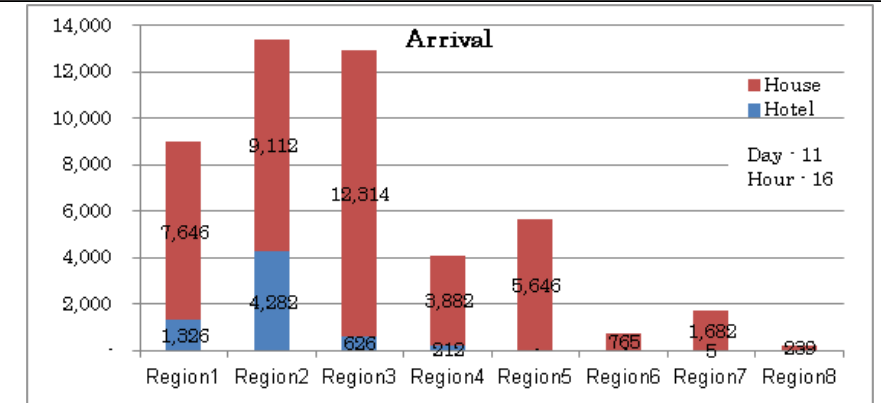
Location



Access Map

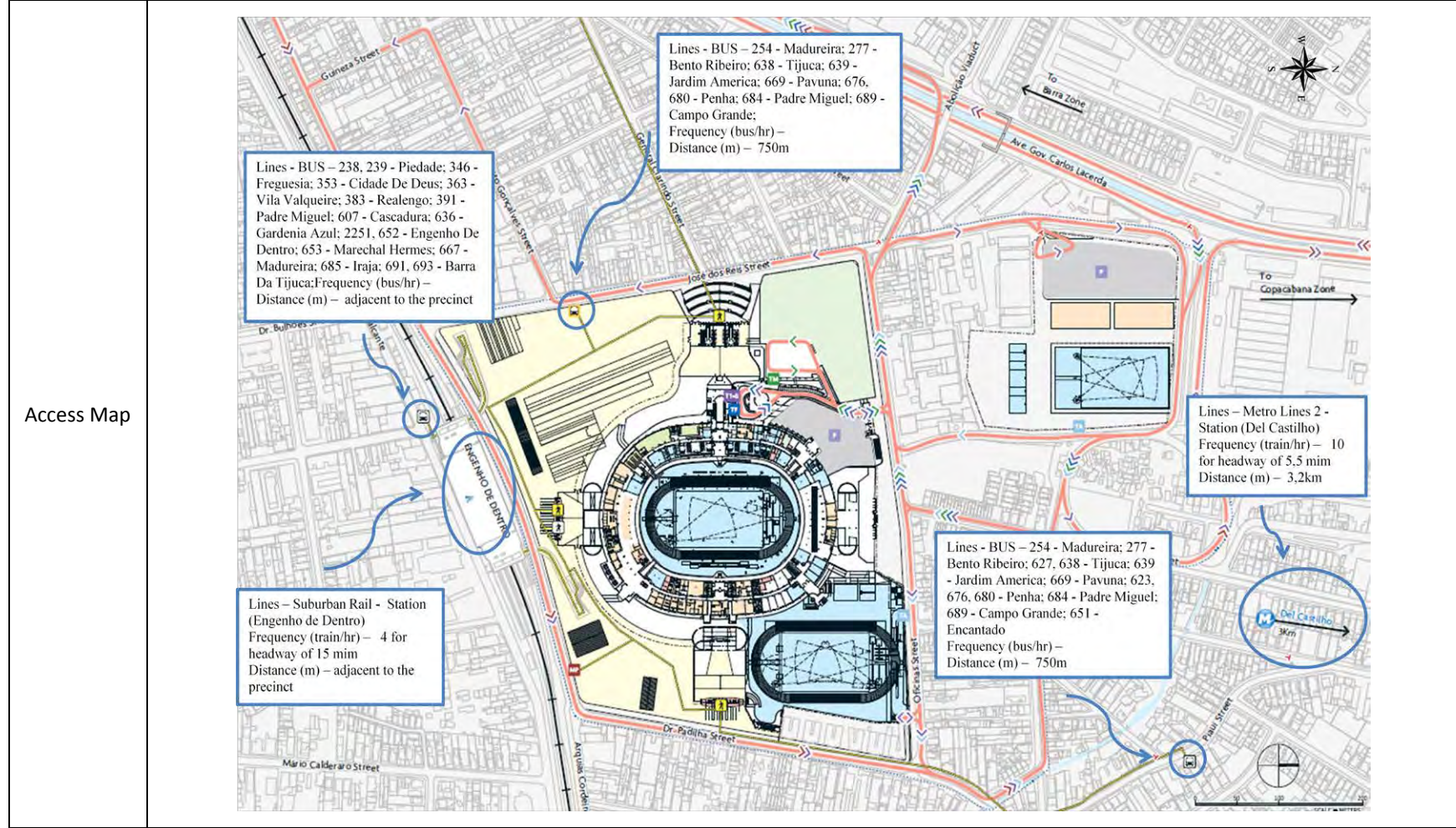
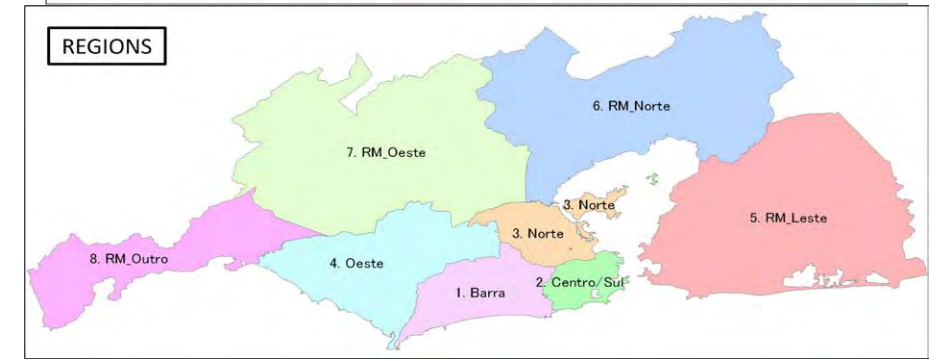
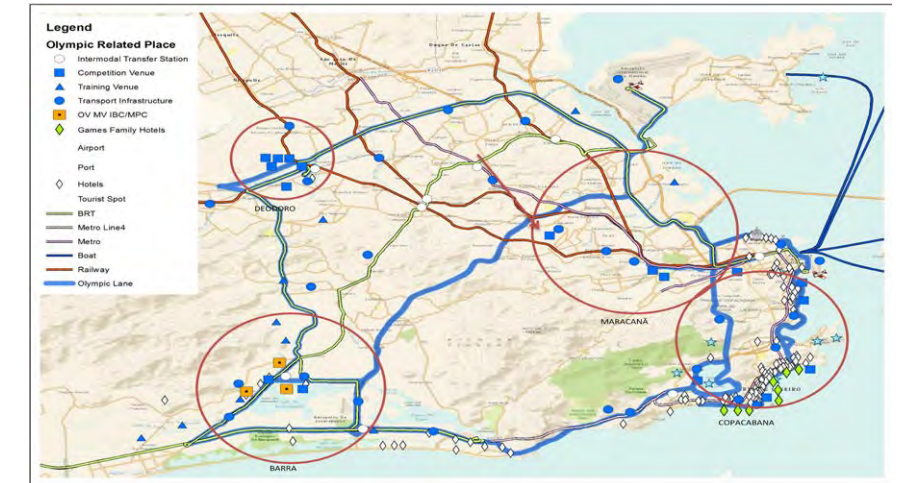


Demand (MARACANÁ STADIUM and MARACANÁZINHO ARENA)



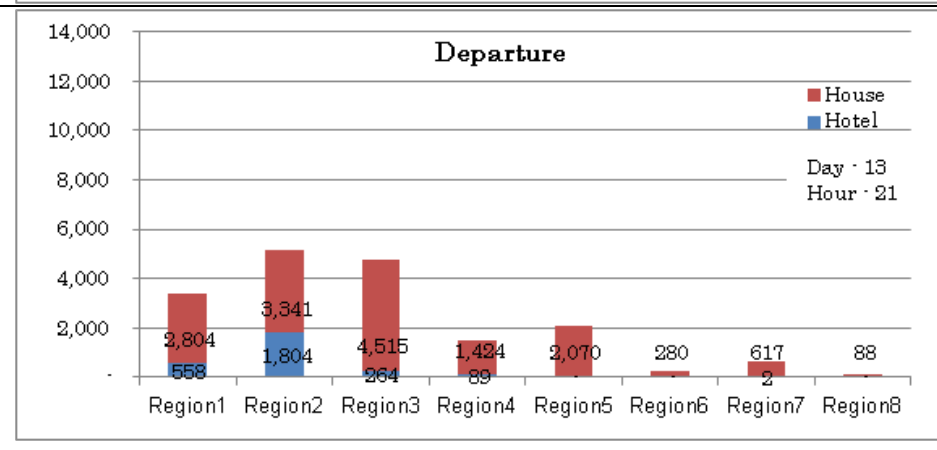
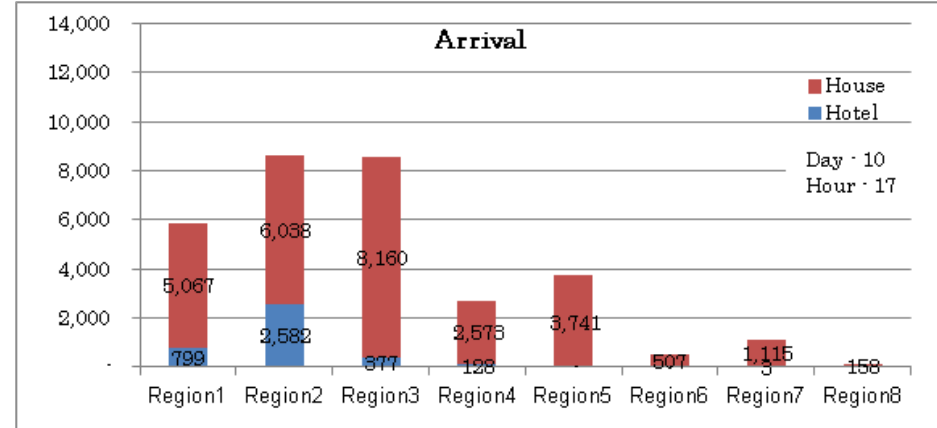
Venue	JOÃO HAVELANGE STADIUM				
Zone	MARACANÃ				
Gross Seat	Olympic Games: Athletics (Track and Field) – 60,000; Paralympic Games: Athletics (Track and Field) – 60,000				
Spectator Transport	Suburban Rail: Engenho de Dentro Station, adjacent to the venue; Metro: Spectators shuttle service to the nearby Metro station (Del Castillo), 3 km from the precinct; Bus services: Various connections provided.				
Timetable	ATHLETICS				
	Day 1				
	Day 2				
	Day 3				
	Day 4				
	Day 5				
	Day 6				
	Day 7	M/W/P/QF/SF/F			
	Day 8	M/W/P/QF/SF/F			
	Day 9	M/W/P/SF/F			
	Day 10	M/W/P/QF/SF/F			
	Day 11	M/W/P/QF/SF/F			
	Day 12	M/W/P/SF/F			
	Day 13	M/W/P/SF/F			
	Day 14	M/W/P/F			
	Day 15	M/W/F			
Day 16					
Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL- Double; SGL - Single; MIX - Mixed					

Location



Access Map

Demand (JOÃO HAVELANGE STADIUM)



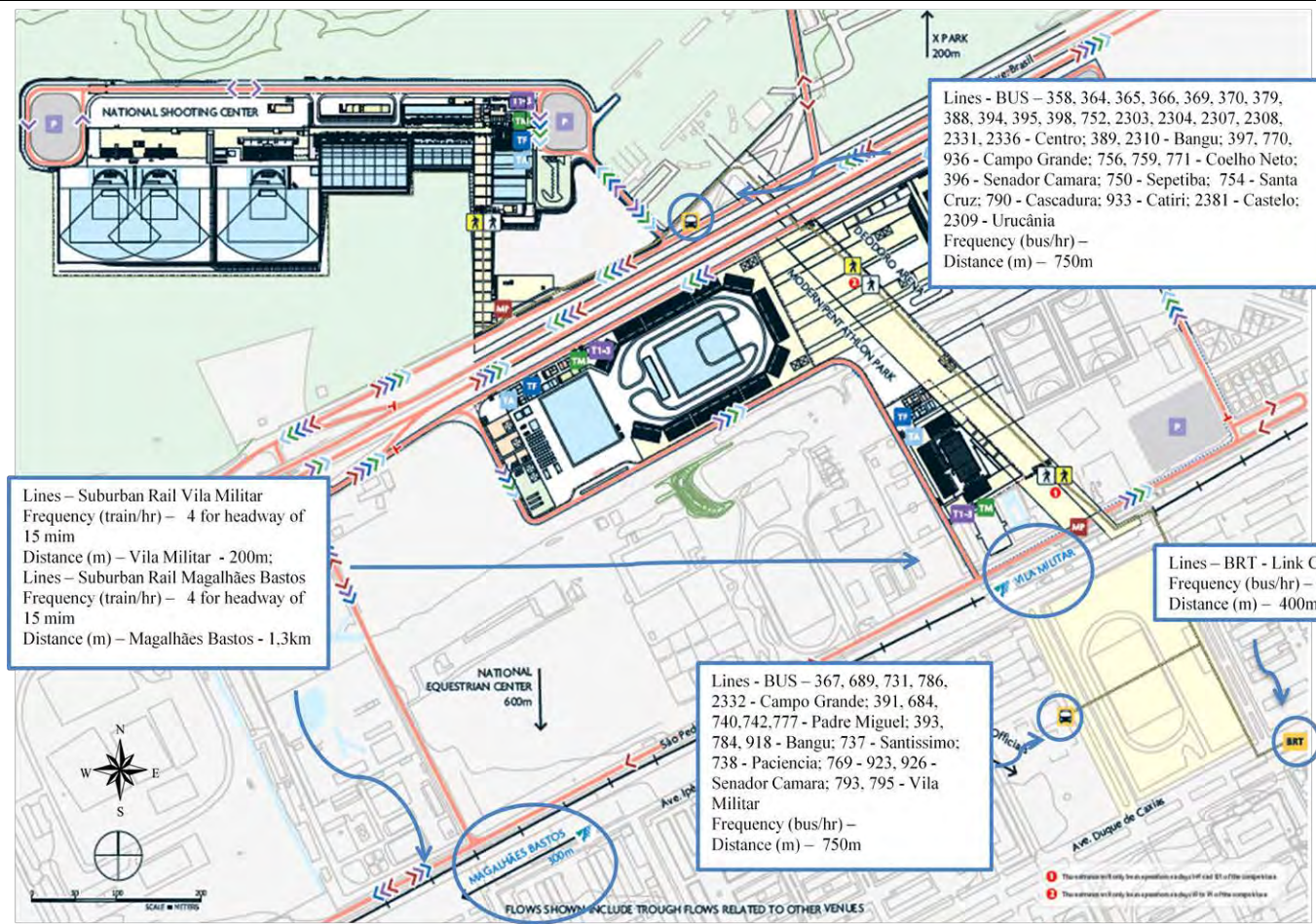
Venue	Deodoro Arena, Deodoro Modern Pentathlon Park and National Shooting Center					
Zone	DEODORO					
Gross Seat	Olympic Games: Deodoro Arena (Fencing) – 5,000; Modern Pentathlon Park – 15,000; Shooting (Rifle and Pistol) – 3,850; Shooting (Trap) – 3,000; Paralympic Games: Deodoro Arena (Wheelchair Fencing) – 2,500; Shooting – 3,850					
Spectator Transport	BRT - Link C: 1 station, 400 m from the venues (average); Suburban Rail: Vila Militar Station, 200 m from the venues (average); Suburban Rail: Magalhães Bastos Station, 1.3 km from the venues (average); Deodoro spectators shuttle service to the BRT and suburban rail stations [Deodoro, Vila Militar, Magalhães Bastos].					
Timetable		Fencing	Modern Pentathlon	Shooting - Rifle and Pistol	Shooting - Trap	
	Day 1	W F		M/W/P/F	M/P	
	Day 2	M F		W/P/F	M/P/F	
	Day 3	W F		M/P/F	W/P/F	
	Day 4	M F		M/P/F	M/P/F	
	Day 5	M/W/SF/F		W/P/F	W/P/F	
	Day 6	W F		W/P/F	W/P/F	
	Day 7	M F		M/P/F	M/P	
	Day 8	W F		M/P/F	M/P/F	
	Day 9	M F		M/P/F		
	Day 10					
	Day 11					
	Day 12					
	Day 13					
	Day 14		W F			
	Day 15		M F			
	Day 16					

Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL - Double; SGL - Single; MIX - Mixed

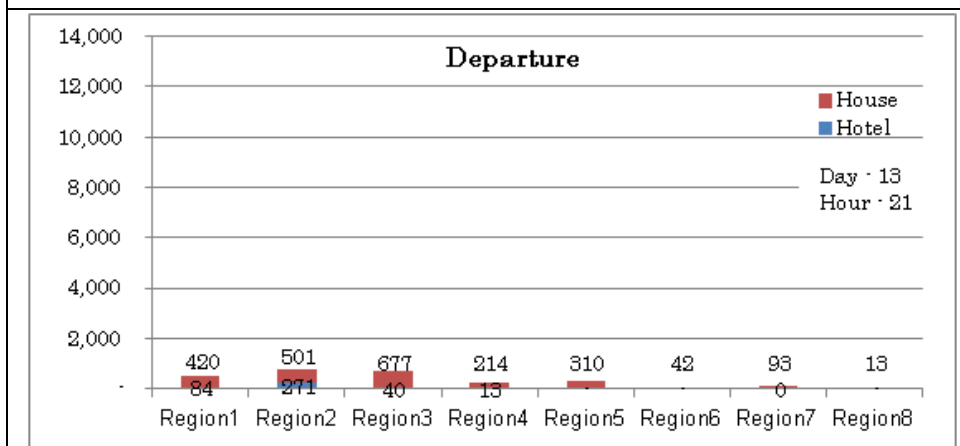
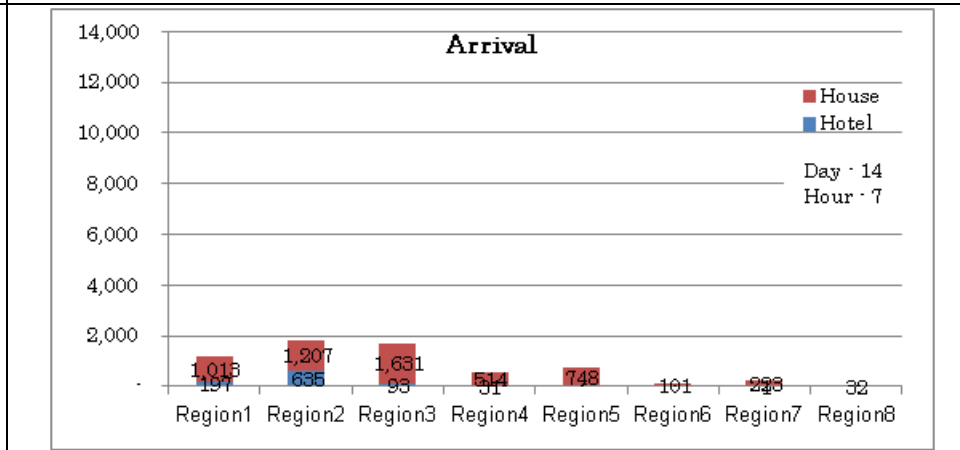
Location



Access Map

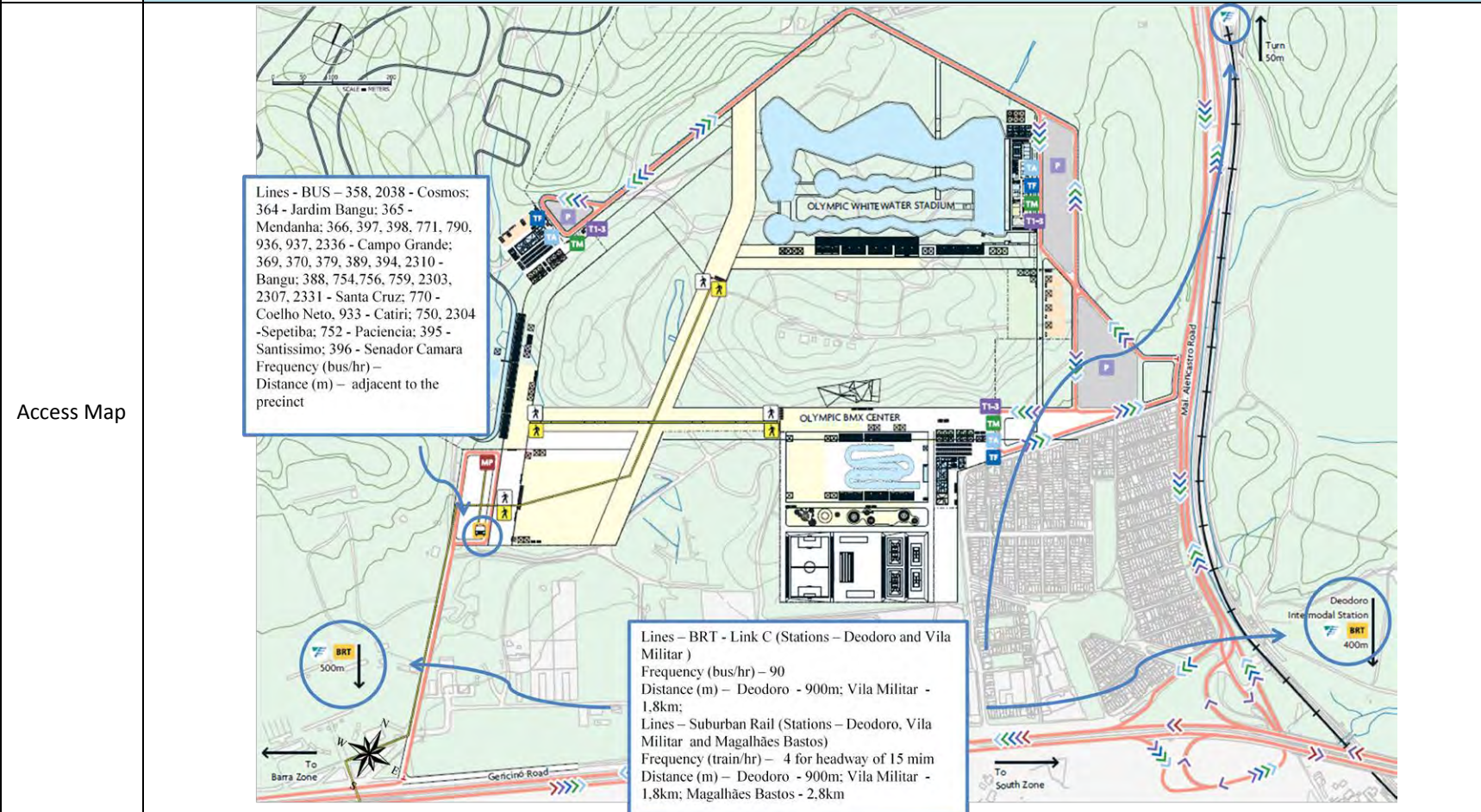


Demand (Deodoro Arena, Deodoro Modern Pentathlon Park and National Shooting Center)

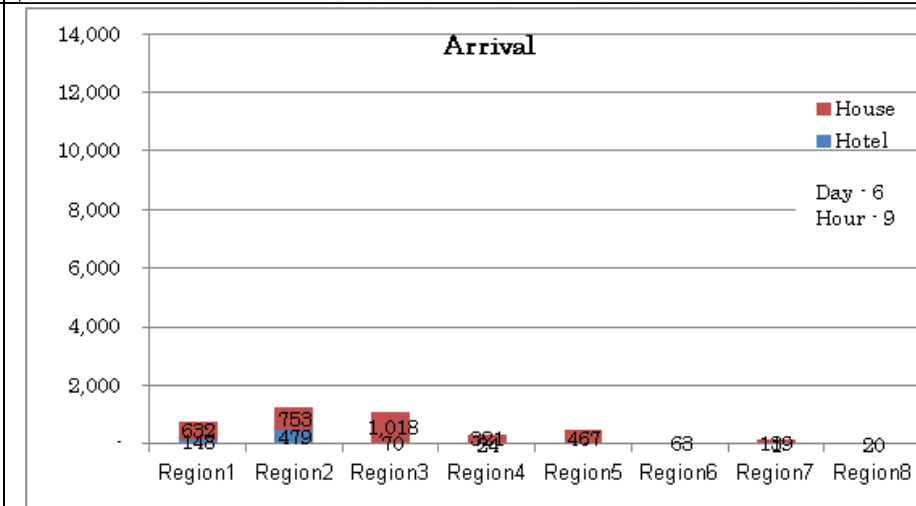


Venue	X PARK PRECINCT					
Zone	DEODORO					
Gross Seat	Olympic Games: Olympic Whitewater Stadium - Canoe/Kayak (Slalom) – 8,000; Olympic BMX Center – 7,500; Olympic Mountain Bike Park – 5,000					
Spectator Transport	BRT - Link C Deodoro Station, 900 m from the precinct; Suburban Rail: Deodoro Station, 900 m from the precinct; Suburban Rail: Vila Militar Station, 1.8 km from the precinct; Suburban Rail: Magalhães Bastos Station, 2.8 km from the precinct; Deodoro spectators shuttle service to the BRT and suburban rail stations [Deodoro, Vila Militar, Magalhães Bastos].					
Timetable		Canoe/Kayak (Slalom)	CYCLING BMX	CYCLING MTB		
	Day 1					
	Day 2	M/P				
	Day 3	M/SF/F				
	Day 4	M/W/P				
	Day 5	M/W/SF/F				
	Day 6					
	Day 7					
	Day 8					
	Day 9					
	Day 10					
	Day 11			W F		
	Day 12			M F		
	Day 13					
	Day 14				W F	
	Day 15				M F	
	Day 16					
Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL- Double; SGL - Single; MIX - Mixed						

Location



Demand (X PARK)

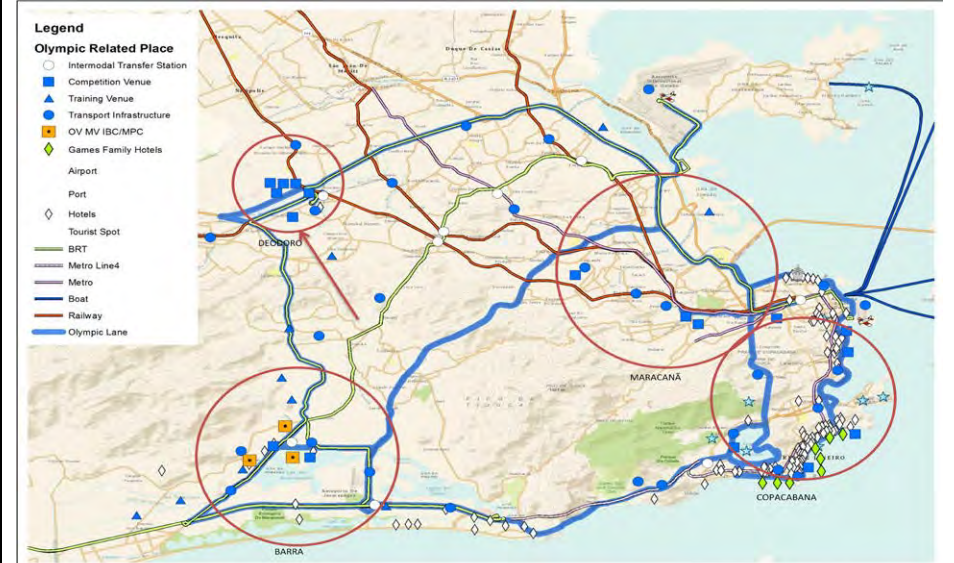


DEPARTURE – NO DATA

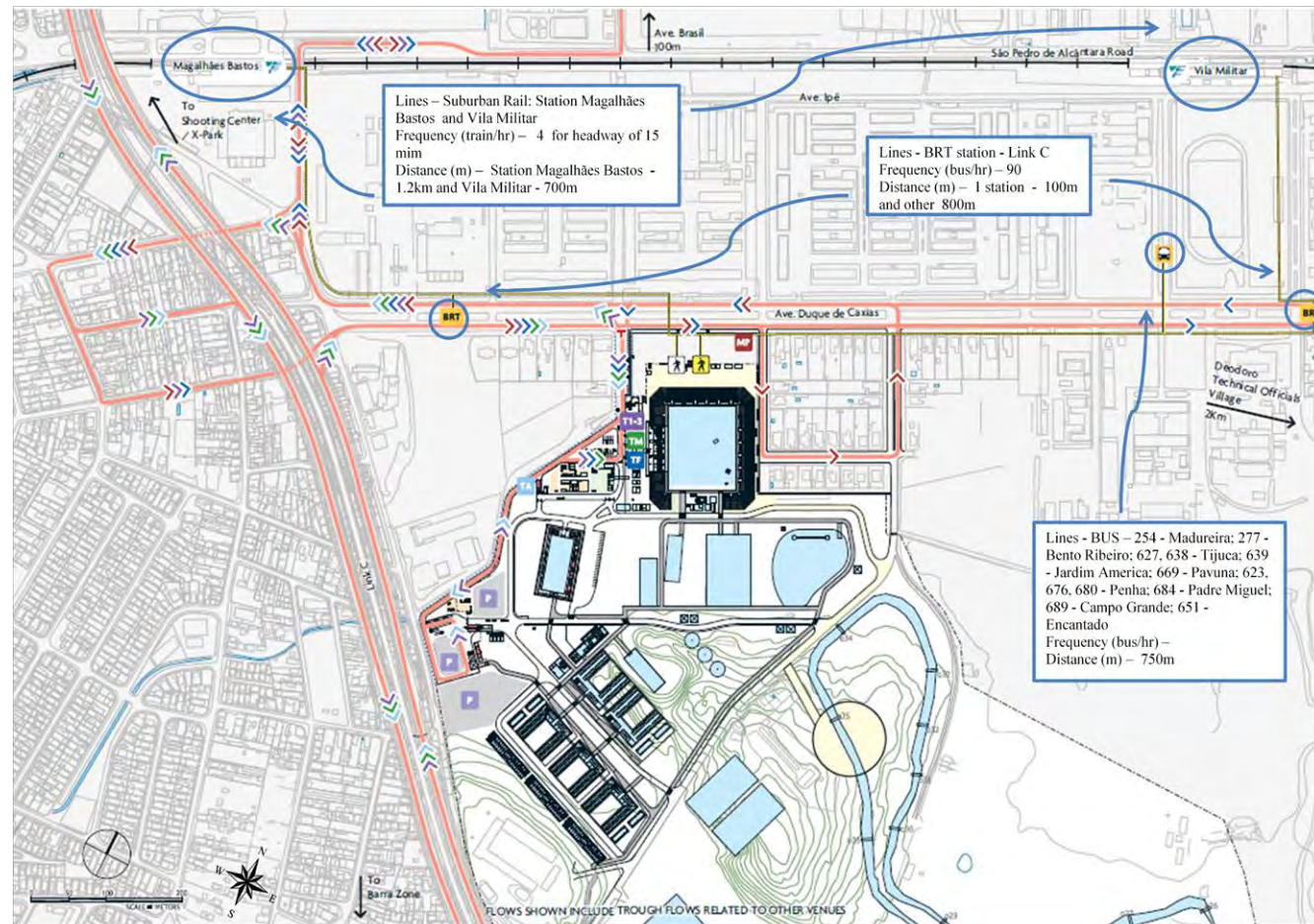
Venue	NATIONAL EQUESTRIAN CENTER					
Zone	DEODORO					
Gross Seat	Olympic Games: Dressage, Eventing, Jumping – 14,000; Paralympic Games: Equestrian – 7,000					
Spectator Transport	BRT station - Link C: 1 station, 100 m from the venue; 1 station, 800 m from the venue; Suburban Rail: 1 station, 1.2km from venue; 1 station, 700m from venue; Deodoro spectators shuttle service to the BRT and suburban rail stations [Vila Militar, Magalhães Bastos].					
Timetable		Equestrian Dressage	Equestrian Eventing	Equestrian Jumping		
	Day 1					
	Day 2		M/W			
	Day 3		M/W			
	Day 4		M/W			
	Day 5		M/W/F			
	Day 6					
	Day 7	M/W				
	Day 8	F				
	Day 9				M/W	
	Day 10	M/W				
	Day 11				M/W	
	Day 12	F				
	Day 13				M/W/F	
	Day 14				M/W/F	
	Day 15					
	Day 16					

Legend: M - Men; W - Women; P - Preliminary; QF - Quarterfinal; SF - Semifinal; F - Final (medal); DBL - Double; SGL - Single; MIX - Mixed

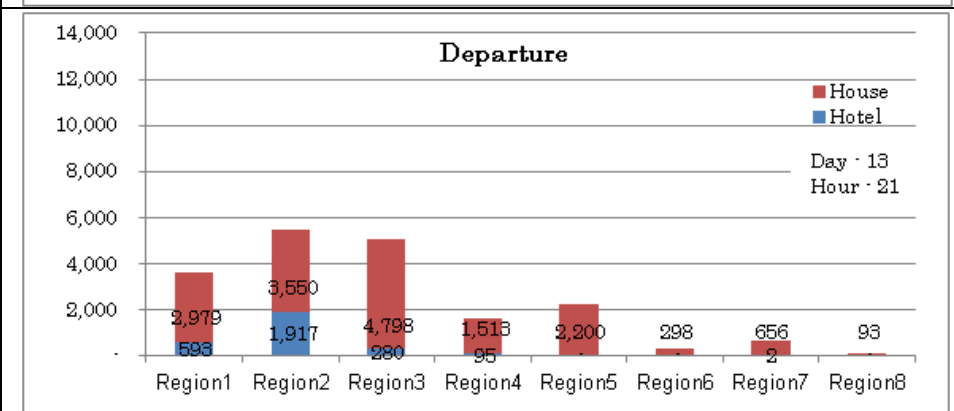
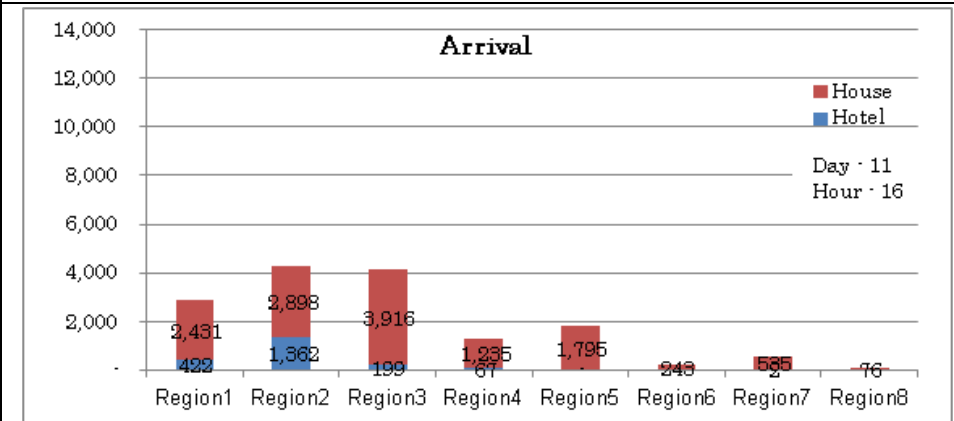
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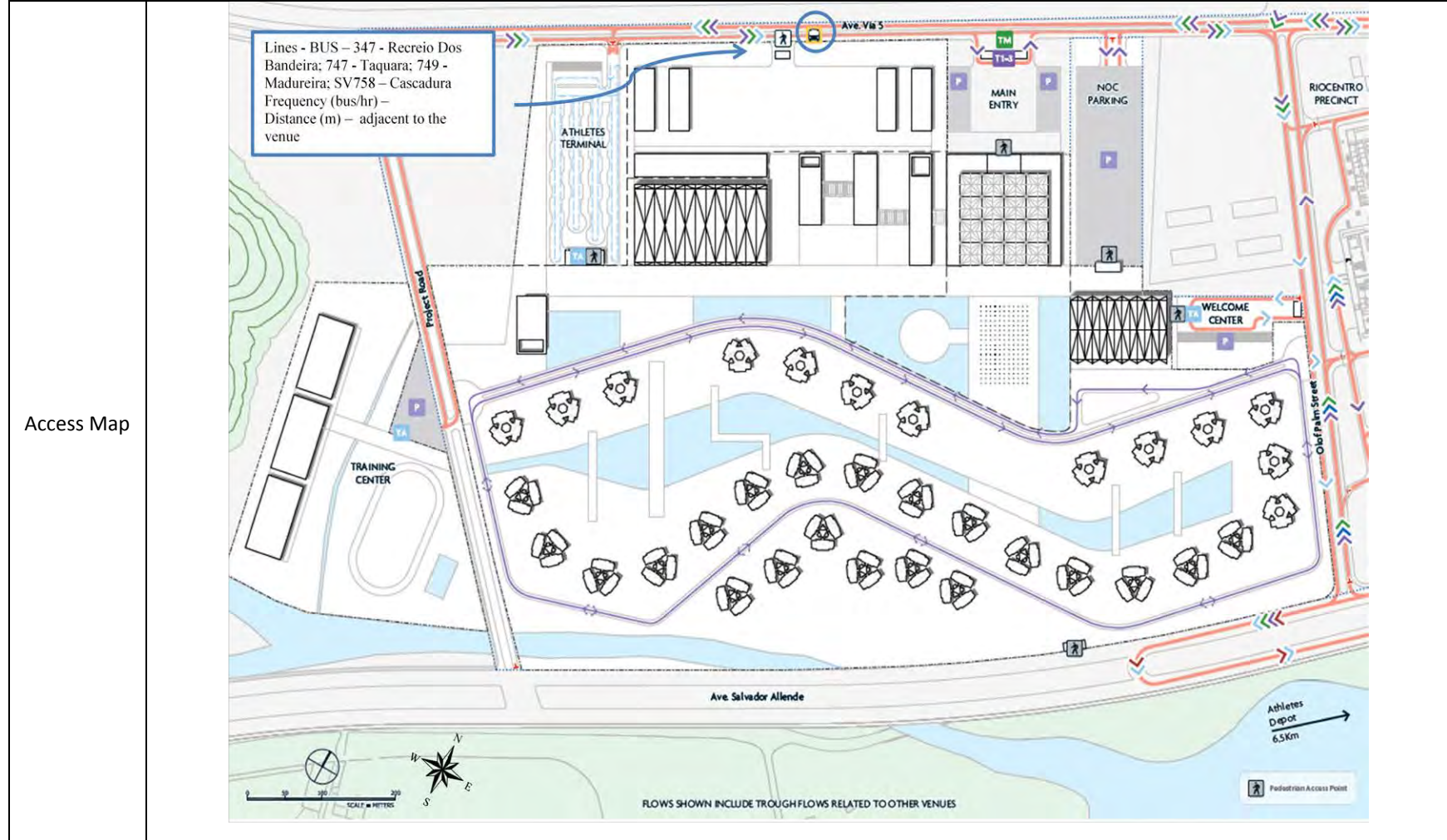
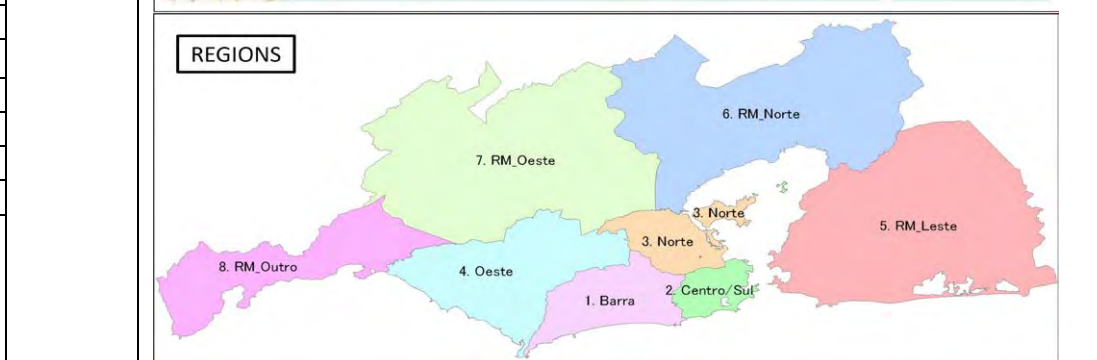
Access Map



Demand (NATIONAL EQUESTRIAN CENTER)



Venue	OLYMPIC VILLAGE					
Zone	BARRA					
Gross Seat						
Spectator Transport	BRT T5 Corridor: Riocentro Terminal Station, 900 m from the precinct; BRT Barra-South Zone: Riocentro Terminal Station, 900 m from the precinct; BRT Link C: Riocentro Terminal Station, 900 m from the precinct.					
Timetable	Day 1					
	Day 2					
	Day 3					
	Day 4					
	Day 5					
	Day 6					
	Day 7					
	Day 8					
	Day 9					
	Day 10					
	Day 11					
	Day 12					
	Day 13					
	Day 14					
	Day 15					
	Day 16					

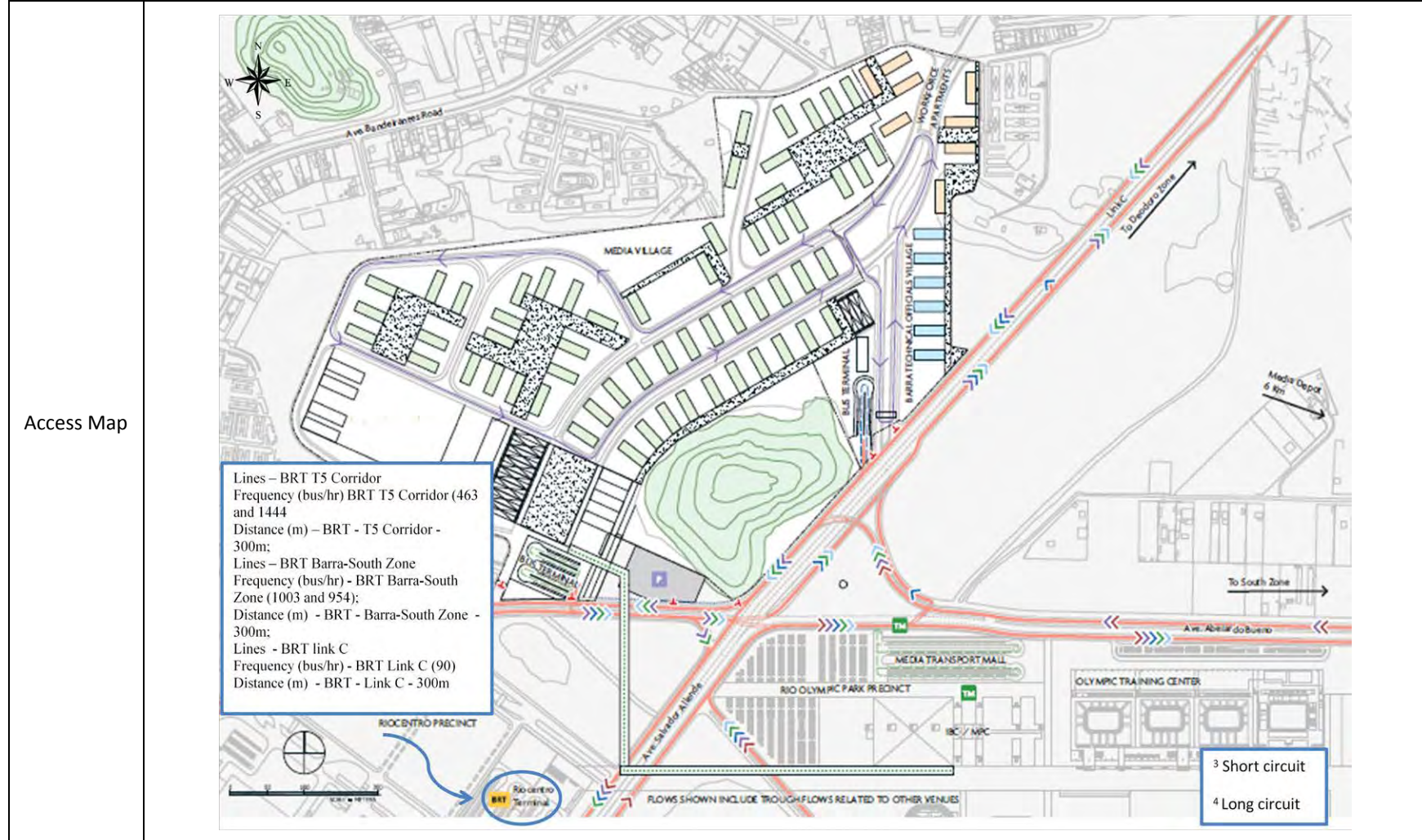
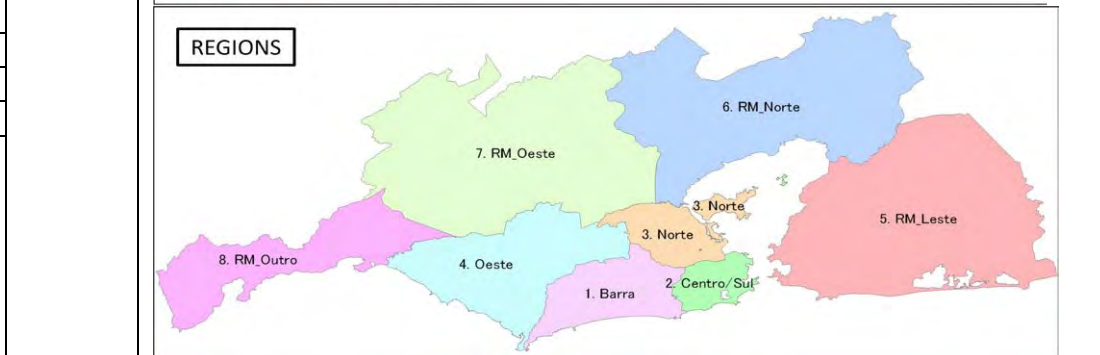
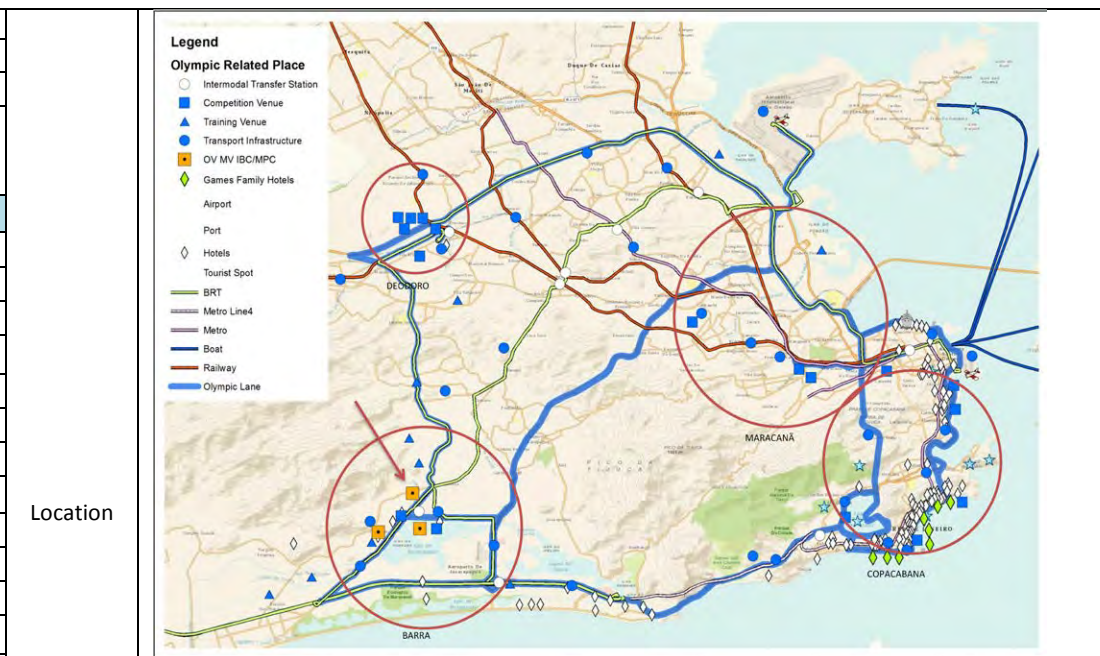


Demand (OLYMPIC VILLAGE)

ARRIVAL - NO DATA

DEPARTURE - NO DATA

Venue	BARRA MEDIA VILLAGE					
Zone	BARRA					
Gross Seat						
Spectator Transport	BRT T5 Corridor: Riocentro Terminal Station, 900 m from the precinct; BRT Barra-South Zone: Riocentro Terminal Station, 900 m from the precinct; BRT Link C: Riocentro Terminal Station, 900 m from the precinct.					
Timetable	Day 1					
	Day 2					
	Day 3					
	Day 4					
	Day 5					
	Day 6					
	Day 7					
	Day 8					
	Day 9					
	Day 10					
	Day 11					
	Day 12					
	Day 13					
	Day 14					
	Day 15					
	Day 16					



ARRIVAL - NO DATA

DEPARTURE - NO DATA

3.5 ACCESSIBILITY SURVEY

3.5.1 Overview

The objective of this survey is to clarify the current conditions and identify the accessibility/mobility problems for all modes of transport in the RMRJ. All the survey pictures in this section were taken by the JICA Study Team. The target places included stops, stations, and terminals where the following aspects were verified:

- Overall station/stop conditions;
- Accessibility and mobility;
- Direction signs;
- Maps, route info, timetable, and travel time info availability;
- ITS services;
- Ticketing booth, automated service, and fare information;
- Information in foreign languages; and
- Safety.

The survey was conducted in September and October 2012. The survey was planned to cover most of the municipal areas and part of the metropolitan areas, mainly those reached by train and ferry. The main stops/stations and terminals of the following modes visited and surveyed are as follows:

- Rail (Supervia),
- Metro,
- Ferry (Barcas),
- Cable Car (Teleferico),
- Bus Rapid System (BRS),
- Bus Rapid Transit (BRT),
- Bus Terminals, and
- Bike Rio.



Source: JICA Study Team

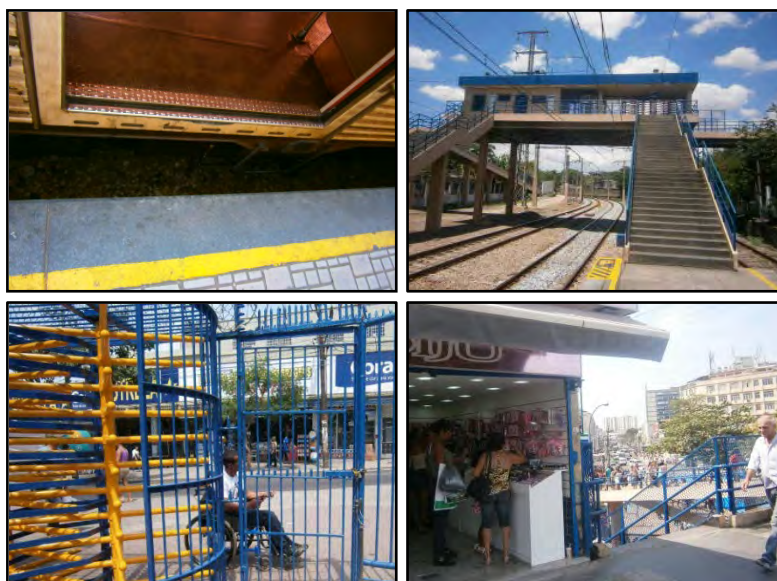
Figure 3-113 Metro, Rail, Cable Car, Ferry, BRS and BRT Stations

3.5.2 SURVEY RESULTS

The complete survey results with pictures and field notes describing the current conditions of stops/stations and terminals by mode are presented in Appendix 6. The key issues observed at each mode are described as follows:

(1) Rail (Supervia)

- Safety hazards around stations;
- Need for better direction signs (especially at entrances);
- Addition of general route map and train arrival info at platforms; and
- Lack of accessibility for disabled users.

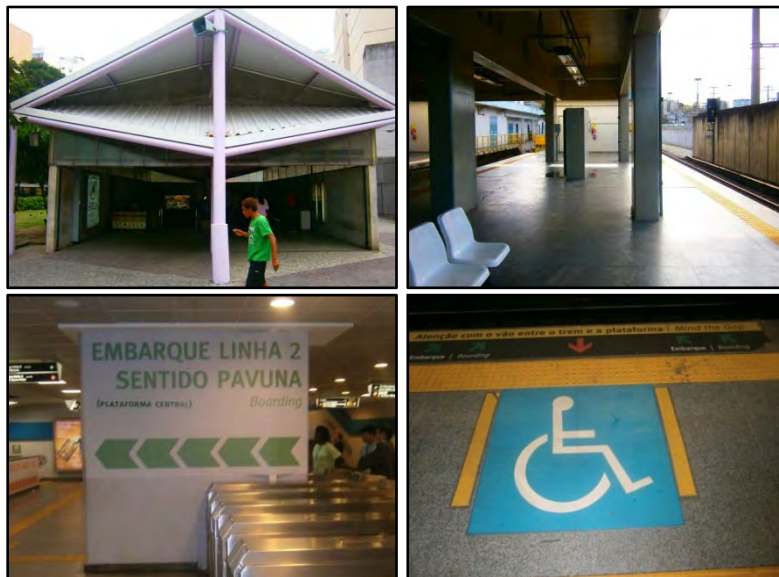


Source: JICA Study Team

Figure 3-114 Key Observations at Rail Stations

(2) Metro

- Zona Sul stations to be better equipped;
- Small font size for info in English;
- No train arrival/travel time info; and
- Good accessibility and direction signs.



Source: JICA Study Team

Figure 3-115 Key Observations at Metro Stations

(3) Ferry (Barcas)

- Safety hazard: gap between the pier and the ferry boat;
- No messages in foreign language;
- Need more information, signs, and maps indicating the surrounding area location.



Source: JICA Study Team

Figure 3-116 Key Observations at Ferry Stations

- (4) Cable Car
 - Guided pathway;
 - Small font size for foreign language; and
 - Good accessibility and direction signs.



Source: JICA Study Team

Figure 3-117 Key Observations at Cable Car

- (5) BRS
 - Some bus stops have unsafe conditions;
 - No messages/signs in foreign language;
 - No timetable/bus arrival info;
 - Bus agglomeration around stops; and
 - In general, vandalism and damages at bus stops.



Source: JICA Study Team

Figure 3-118 Key Observations at BRS Stops

- (6) BRT (TransOeste Line)
- System is still under construction;
 - No messages/signs in foreign language;
 - Bus arrival information available at some stations;
 - Good accessibility around stations; and
 - Dedicated boarding zone for disabled users.



Source: JICA Study Team

Figure 3-119 Key Observations at BRT Stops

- (7) Bus Terminals
 - 1) Roberto Silveira (Niteroi)
 - No info in foreign language; and
 - Improvement needed for accessibility for disabled users.



Source: JICA Study Team

Figure 3-120 Key Observations at Roberto Silveira Bus Terminal

- 2) Novo Rio (Rio de Janeiro)
 - Info in English are available;
 - Good accessibility and direction signs; and
 - Surveillance Control Center.



Source: JICA Study Team

Figure 3-121 Key Observations at Novo Rio Bus Terminal

- (8) Bike Rio
- Need cell phone/mobile applications to unlock bikes;
 - Instructions available in English;
 - Integration with some metro stations; and
 - Difficult access at some locations.



Source: JICA Study Team

Figure 3-122 Key Observations at Bike Rio Stations

3.5.3 COMPARISON SUMMARY

After analyzing the current conditions of stations/stops and terminals from the survey, the JICA Study Team ranked each mode in terms of the following criteria: overall conditions, accessibility, information availability, signs and directions, ITS services, and safety. As shown in Table 3-26 below, the rail mode was observed to be the most deficient mode while the recently installed TransOeste BRT was observed to have the most features that promote accessibility and mobility of public transport users (see the photos below).

Table 3-26 Comparison Summary between Modes

Mode	Overall Conditions	Accessibility	Information Availability	Signs and Directions	ITS Services	Safety
Rail	---	---	-	---	---	---
Metro	+	+	+	+	-	+
Barcas	-	-	-	-	+	-
Cable Car	+	+	+	+	-	+
BRS	-	-	-	+	-	-
BRT	++	++	+	+	+	++
Bus Terminals	+	+	+	+	-	+
Bike Rio	+	-	-	+	+	-

+++ Excellent, ++ Good, + Average, - Below Average, -- Deficient

Source: JICA Study Team



Source: JICA Study Team

Figure 3-123 BRT – Example of Good Accessibility and Information for Users

3.5.4 CONCLUSIONS

Based on the results of the accessibility survey, the key conclusions and requirements for public transport users are as follow:

- Improve accessibility for disabled users in some modes;
- Maintenance needed to reduce the risk of accidents;
- Need for better information in foreign languages;
- Deficiency observed in terms of direction signs and guidance (specially for new users);
- Insufficient information regarding timetable and arrival/travel time (except BRT);
- Increase the use of ITS to better inform and assist users (e.g., automated kiosk centers in different languages, monitors and panels with route, arrival/travel time, next stop/station, etc.).

As a final comparison, Figure 3-124 below illustrates how the discussed accessibility and information requirements were successfully implemented in London across different modes.



Figure 3-124 Accessibility and Information for Public Transport Users – London Example